TABLE OF CONTENTS

SECTION 1 OPERATION

1-1. Overview 1-1
1-2. Location and Function of Parts and Controls 1-2
1-3. Installation 1-4
1-3-1. Attaching to the camera 1-4
1-3-2. Attaching the hood 1-6
1-3-3. Attaching a camera number plate 1-8
1-4. Operation 1-9
1-4-1. Adjusting the screen 1-9
1-4-2. Adjusting the angle of the viewfinder 1-10
1-5. Specifications 1-12

2. INSTALLATION

3. THEORY OF OPERATION

3-1. Video Input Circuit 3-1
3-2. Aperture Circuit 3-1
3-3. Video Output Circuit 3-3
3-4. Sync Separating Circuit and Pulse Smoothing Circuit 3-4
3-5. Horizontal Oscillation and Deflection Circuit 3-5
3-6. Horizontal Size Circuit 3-5
3-7. Blanking Circuit 3-6
3-8. Vertical Oscillation and Deflection Circuit 3-7
3-9. High Voltage Circuit 3-8
3-10. X-ray Protection Circuit 3-8
3-11. Switching Power Supply Circuit 3-9
3-12. Horizontal Dynamic Focus Circuit 3-10
3-13. HDVS Sync Signal 3-11

4. MAINTENANCE

4-1. Removal of Cabinet 4-1
4-1-1. Removal of Cabinet (1) 4-1
4-1-2. Removal of Cabinet (2) 4-2
4-2. Replacement of Main Parts 4-3
4-2-1. Replacement of CRT 4-3
4-2-2. Replacement of Deflection Yoke 4-4
4-2-3. Removal of High Voltage Block 4-5
4-3. Precautions on Maintenance 4-6
4-3-1. Precautions on Replacement Parts . . . 4-6
4-3-2. Precaution on Maintenance 4-6
4-3-3. Trouble Shooting 4-7

5. ALIGNMENT

A. BLOCK DIAGRAM

OVERALL BLOCK A-1

B. SEMICONDUCTOR PIN ASSIGNMENTS

C. SCHEMATIC DIAGRAMS AND BOARD ILLUSTRATIONS

BOARD LAYOUT C-1
PD-159, PD-160, PD-162
PD-163, PD-164 . . . . . C-4
PD-158, PD-161, PD-245 . . . . . C-10

D. SPARE PARTS

D-1. PARTS INFORMATION D-1
D-2. EXPLODED VIEW D-2
D-3. ELECTRICAL PARTS LIST D-9

SECTION 1 OPERATION

1-1. Overview

The HDVF-75 is a 7-inch monochrome electronic viewfinder designed to be mounted on the Sony High Definition Video System (HDVS) color video camera.

Power-saving design

The allowable input voltage range is wide. This model has low power consumption.

High-resolution picture

This viewfinder has a high-resolution picture tube. Horizontal resolution is more than 1,000 lines and vertical resolution is more than 750 lines.

Stable pictures

This highly efficient high-voltage regulation circuit helps to stabilize pictures.

Continuously variable peaking compensation

The continuously variable peaking compensation circuit helps to provide sharp pictures and make it easier to focus the camera.

Tally lamps

This viewfinder is provided with two types of tally lamps which light up when each tally signal has been received.

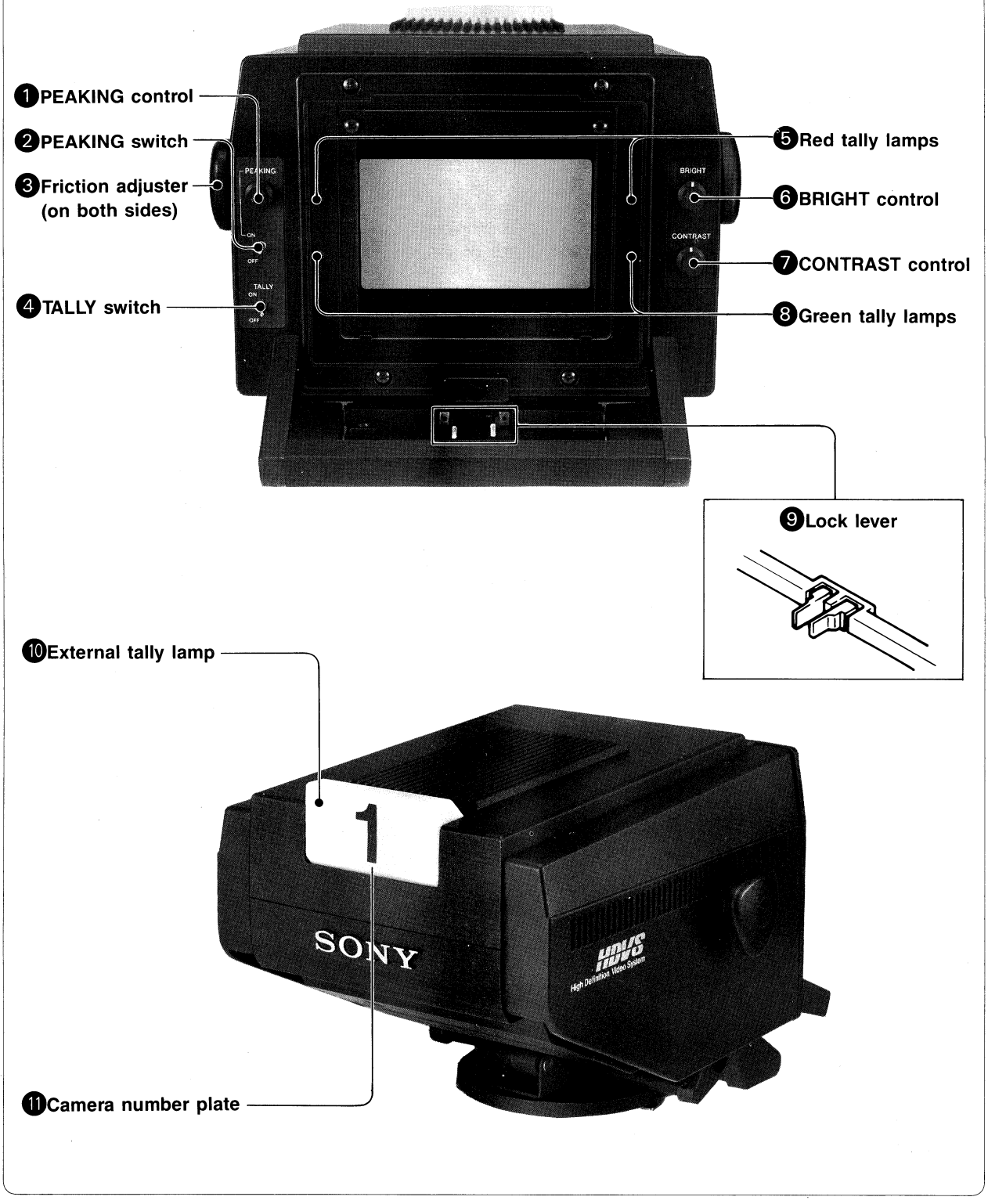
Easy operation

This viewfinder can be rotated 40 degrees up and down, and 90 degrees right and left.

Water-resistant

The protective outer structure enables you to shoot outdoors.

1-2. Location and Function of Parts and Controls



❶ PEAKING control
Used for contour compensation (peaking) of the picture when the PEAKING switch is set to ON. Compensation increases as the control is turned clockwise. The compensation ranges from 0 to 10 dB.

❷ PEAKING switch
Allows contour compensation with the PEAKING control when this switch is set to ON. When it is set to OFF, the PEAKING control does not function, and compensation is equivalent to 0 dB.

❸ Friction adjuster
Used to adjust the frictional force when changing the angle of the viewfinder.

❹ TALLY switch
Makes the external tally lamp ⓾ function when this switch is set to ON.
When this switch is set to OFF, the external tally lamp does not light even if the red tally signal is input to the camera.

❺ Red tally lamps
They light up when the camera receives the red tally signal.
They light up also with the tally signal from the VTR when the camera is directly connected to the VTR.

❻ BRIGHT control
Used to adjust the picture brightness.

❼ CONTRAST control
Used to adjust the picture contrast.

❽ Green tally lamps
They light up when the camera receives the green tally signal.

❾ Lock lever
Locks the viewfinder at the standard factory preset position or at the top position (the angle of the viewfinder is only adjustable at this position).

⓾ External tally lamp
Functions the same as the red tally lamps on the viewfinder screen.
This does not light when the TALLY switch ❹ is set to OFF.

⓫ Camera number plate
The number plates from 0 to 9 (supplied) show the camera numbers.

> PEAKING ❶, BRIGHT ❻, CONTRAST ❼ controls do not have any effect on the video output signals of the camera.

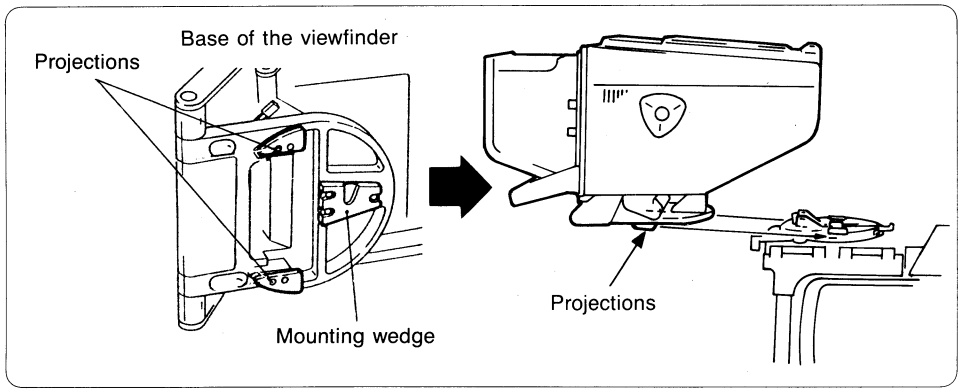
1-3. Installation

1-3-1. Attaching to the Camera

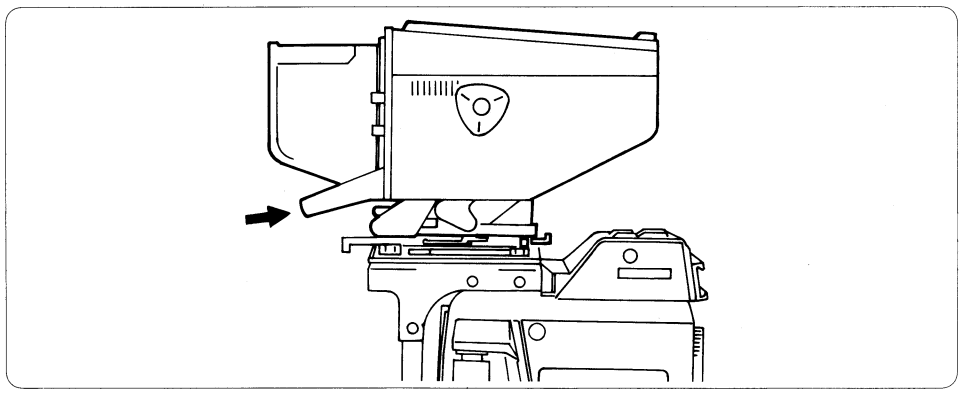
The viewfinder is mounted to the HKCF-75 VF mounting plate (optional) which has been attached to the camera.

1 Mount the VF mounting plate (optional) to the camera. For details on the installation of the HKCF-75, refer to the installation manual of the HKCF-75 and operation manual of the HDC-300 HD camera head.

2 Put the viewfinder on the base plate of the HKCF-75 so that the mounting wedge of the base may be mounted in the V-shaped groove of the plate, and so that the projections of the base may be positioned as illustrated.

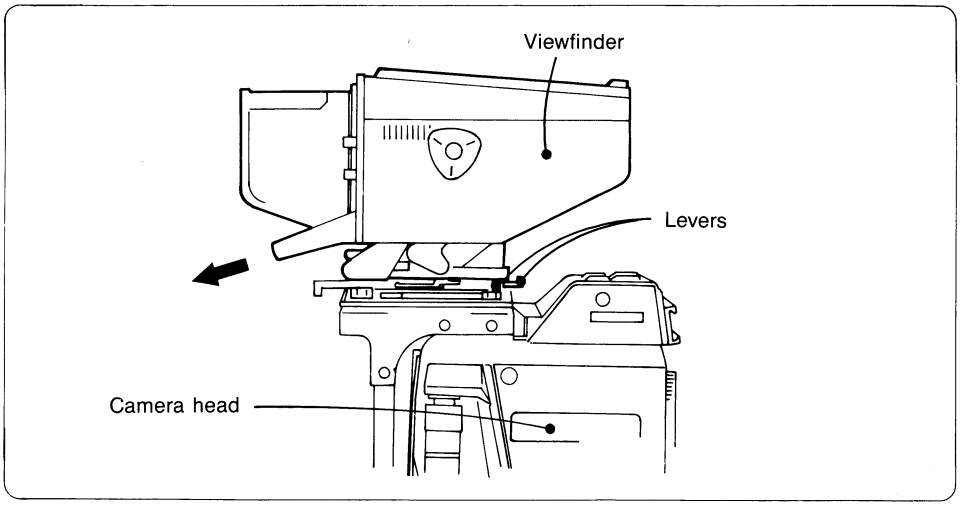


3 Insert the panning base into the plate securely by pushing the handle of the viewfinder.



How to remove

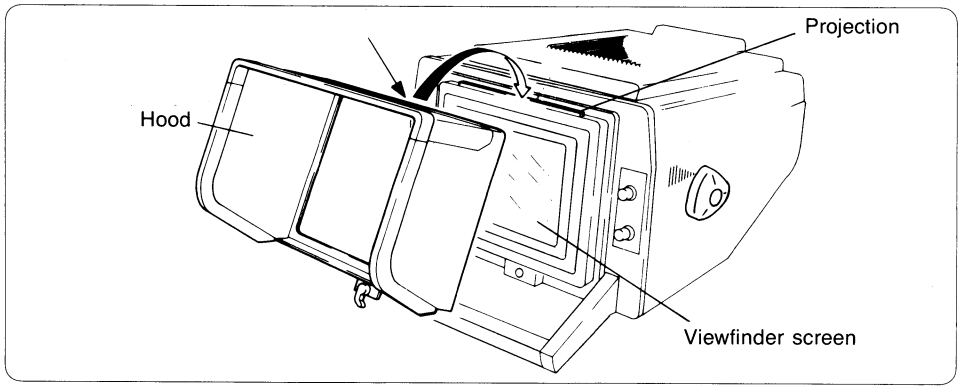
Pushing the two levers simultaneously as illustrated below, pull the handle toward you, and remove the viewfinder.



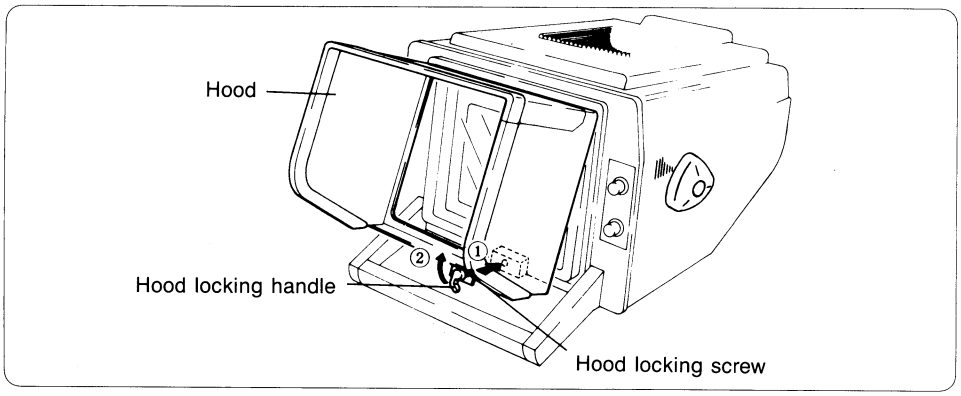
1-3-2. Attaching the Hood

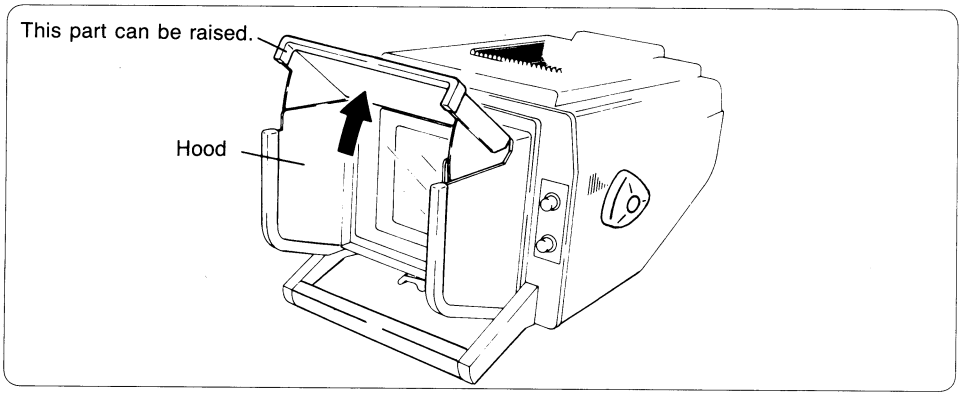
Attaching the indoor hood

1 Hook the rear, upper part of the hood at the projection of the upper part of the viewfinder.



2 Insert the hood locking screw into the hole of the lower part of the viewfinder screen, and turn the hood locking handle clockwise.

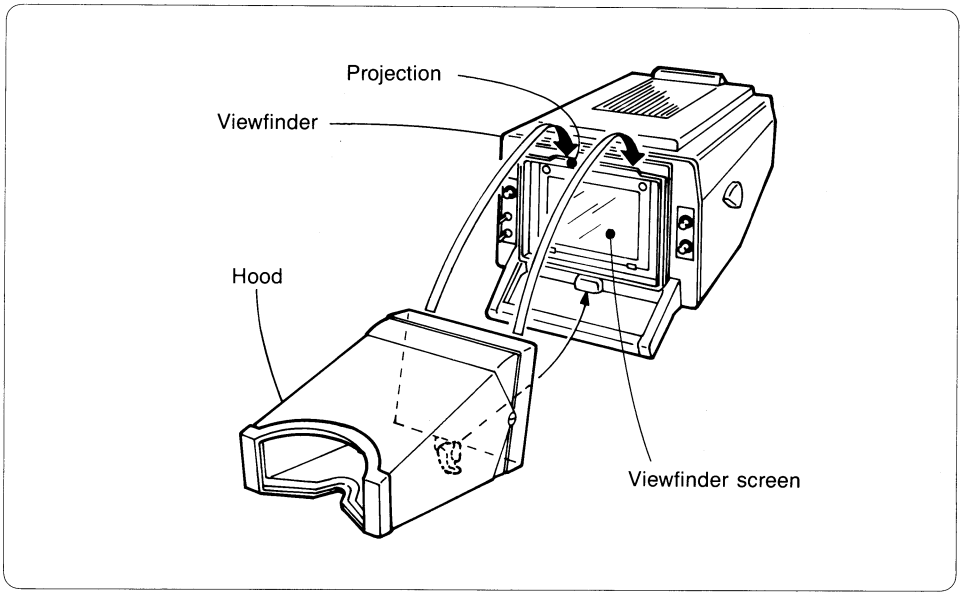




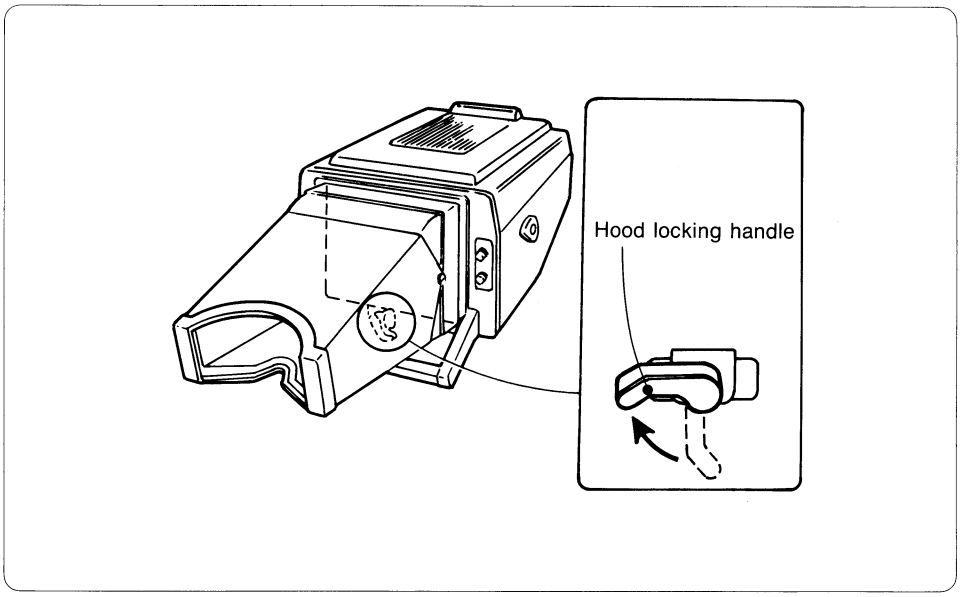
Attaching the outdoor hood

When the hood for outdoor use is mounted, you can see the viewfinder screen clearly as it prevents external light from hitting the screen. The angle of the hood can be adjusted so that you can see the screen with ease.

1 Attach the hood to the viewfinder.



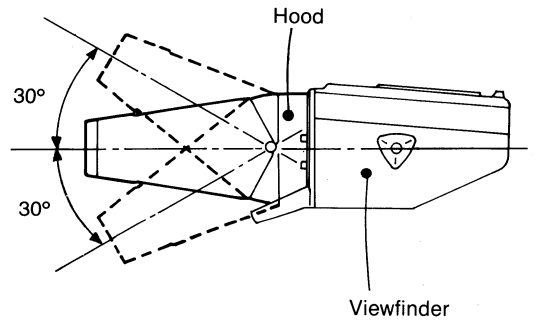
2 Turn the hood locking handle to lock the hood.



Note

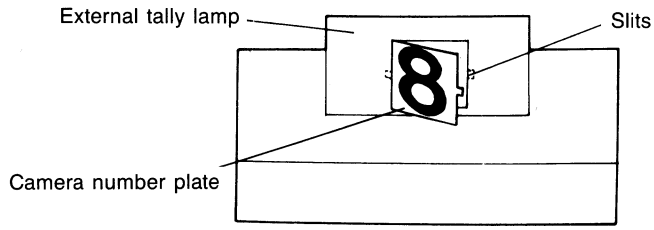
Clean the hood with a dry soft cloth, or soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which might damage the finish.

3 Adjust the angle of the hood.



1-3-3. Attaching a Camera Number Plate

Insert the tabs on the sides of a number plate into each slit in the external tally lamp.

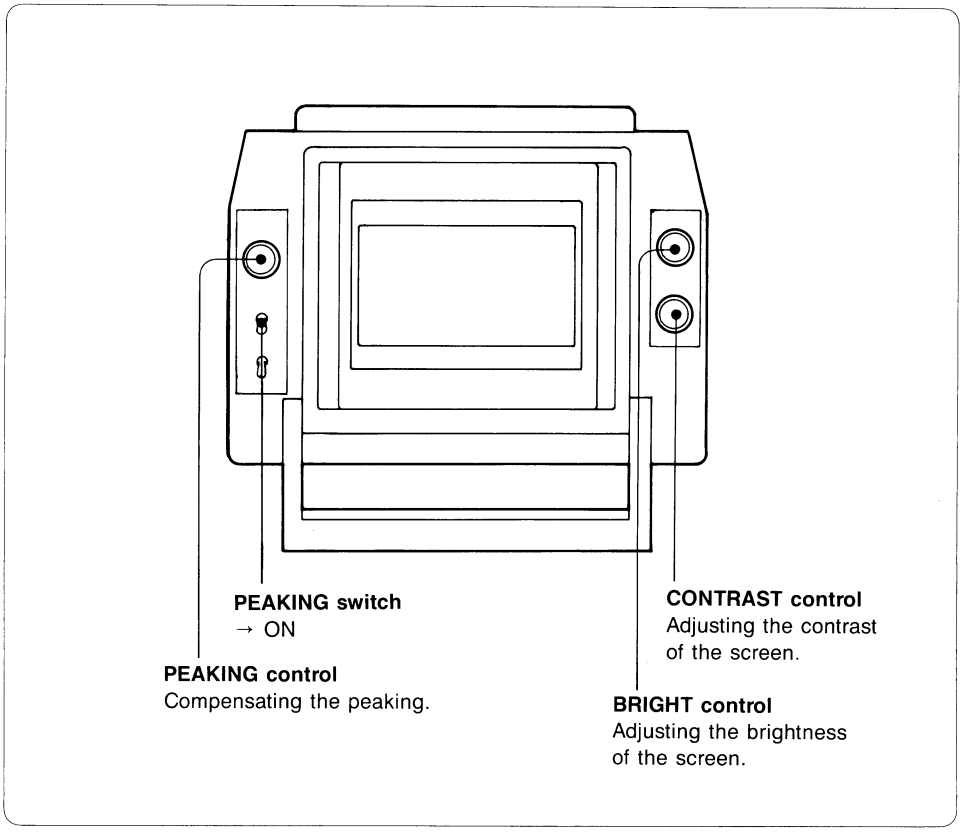


1-4. Operation

When the power of the camera is turned on, the power is also supplied to the viewfinder, and the picture picked up by the camera can be seen on the viewfinder screen.

1-4-1. Adjusting the Screen

Adjust the BRIGHT, CONTRAST, and PEAKING controls in order to obtain a good picture.

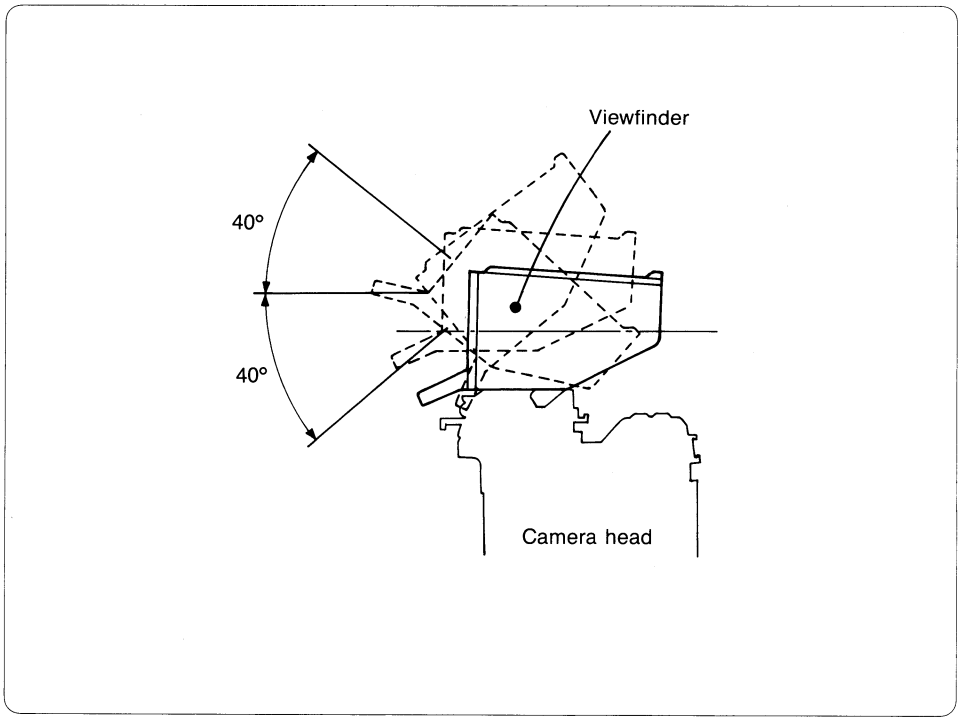


1-4-2. Adjusting the Angle of the Viewfinder

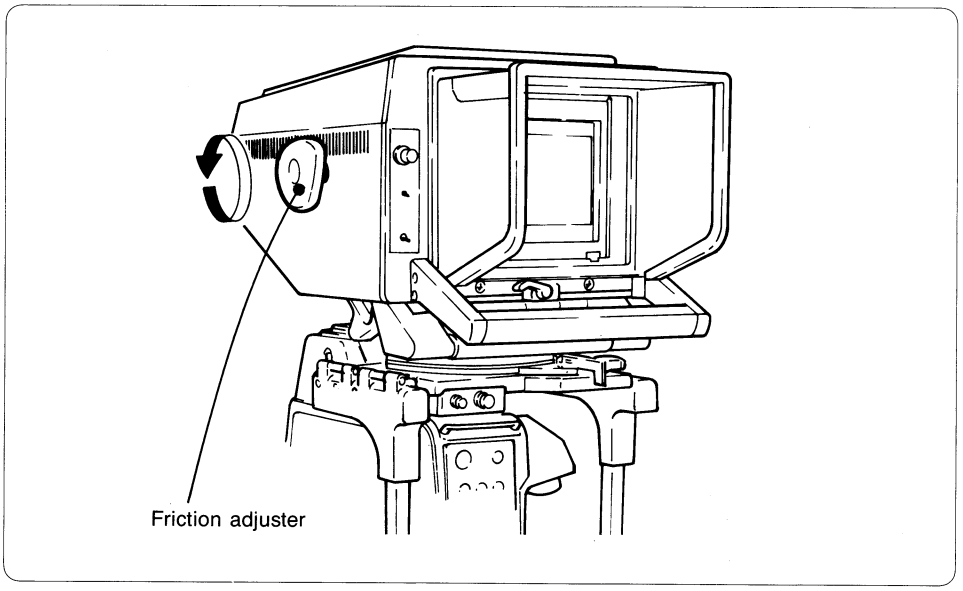
Adjust the angle of the viewfinder so that it is easy to see the viewfinder screen.

How to tilt the viewfinder

The viewfinder can be turned 40 degrees up and down.

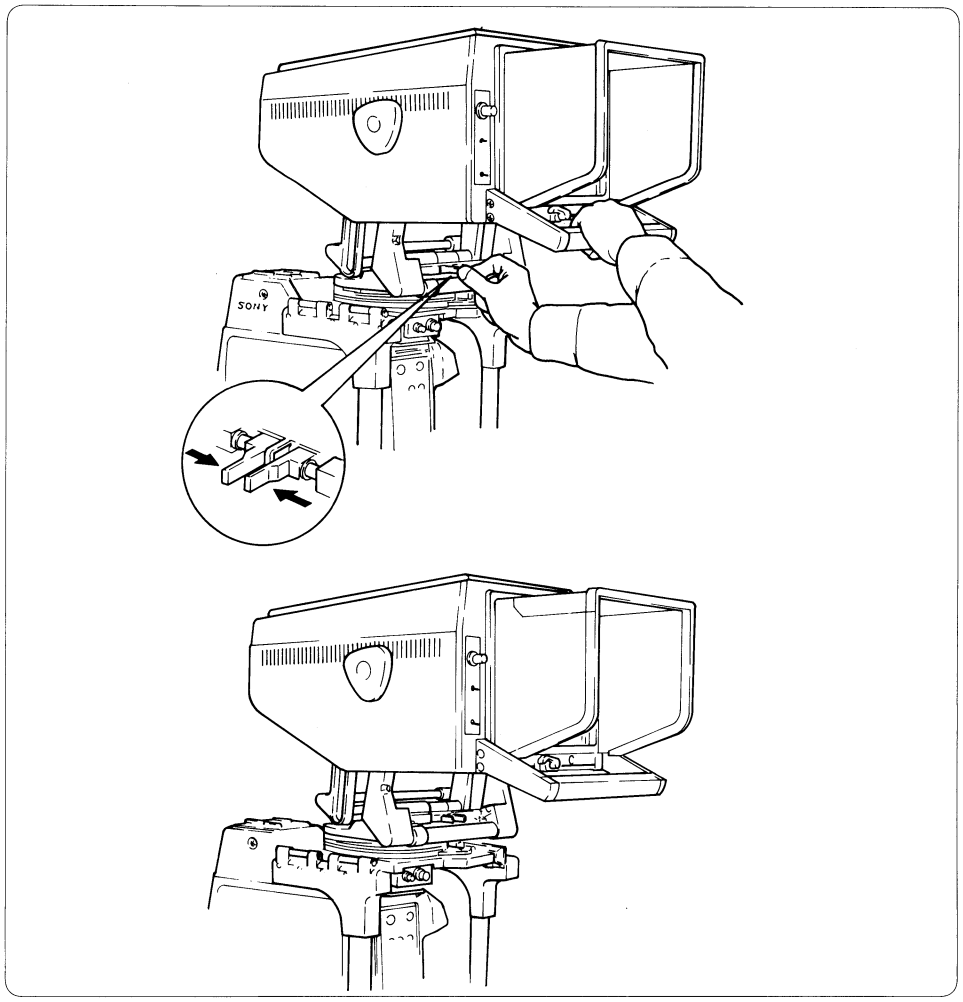


1 Loosen the friction adjuster on both sides of the viewfinder a little.

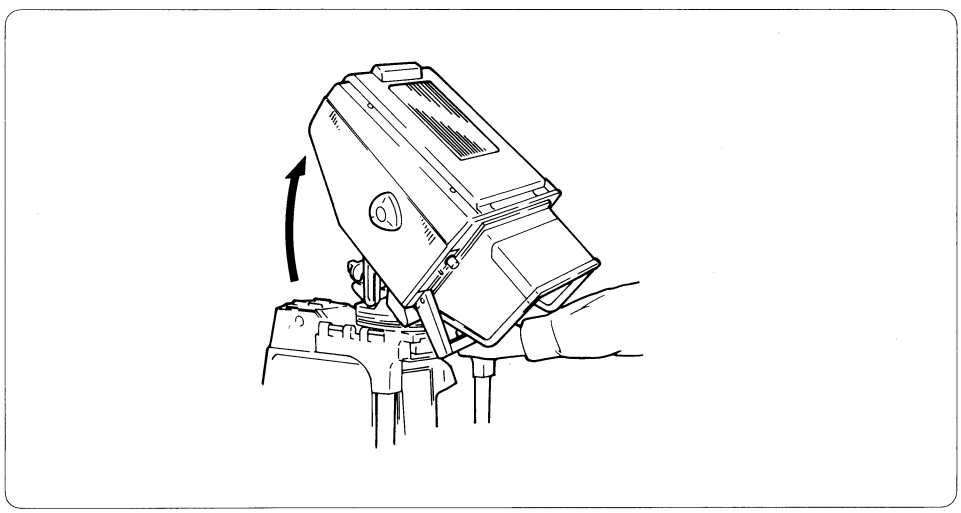


Note
When the camera is carried, lower the viewfinder while pressing the prongs of the lock lever together and tighten the friction adjusters.

2 While pressing the prongs of the lock lever together, pull up the viewfinder to the top position. The viewfinder locks in that position when you release the lock lever.



3 Adjust the angle of the viewfinder to your preference.



4 Tighten the friction adjusters.

1-5. Specifications

System	Scanning lines 1,125 lines Vertical frequency 60 Hz Horizontal frequency 33.75 kHz
CRT	7-inch monochrome 70-degree deflection
Picture size	120 × 90 mm (16:9) ($4\frac{3}{4}$ × $3\frac{5}{8}$ inches)
Brightness	250 foot-lamberts max.
Resolution	Horizontal: More than 1,000 lines Vertical: More than 750 lines
Geometric distortion	Within 1.5%
EHT voltage	17 ± 0.5 kV
Power sources	100 to 200V DC
Video input	1.0Vp-p, 3 level sync, 75-ohm terminated
Frequency response	30 Hz to 23 MHz ± 1.0 dB 23 Hz to 27 MHz ± 3.0 dB
Aperture correction	0 to 9 dB at 13 ± 2 MHz
Power consumption	45W max.
Dimensions	260 × 218 × 422 mm (w/h/d) ($10\frac{1}{4}$ × $8\frac{5}{8}$ × $16\frac{5}{8}$ inches) excluding the hood
Weight	7.4 kg (16 lb 5 oz) excluding the hood
Accessories supplied	Indoor hood (1) Outdoor hood (1) Carrying case (1) Caster (4) Cylinder lamp (1) Number plate (1) Operation and maintenance manual (1 set)

Design and specifications subject to change without notice.

SECTION 3
THEORY OF OPERATION

3-1. Video Input Circuit (PD-159 Board)

The composite video signal sent from pin 1 of CN101 passes through pin 1 of CN11 and goes to Q1 and Q2 to be converted into a low impedance equivalent. If then enters the aperture circuit and sync separating circuit.

3-2. Aperture Circuit (PD-159 Board)

The shape of the composite video signal is corrected by the aperture correcting circuit which contains two delay lines, DL1 and DL2.
DL1 delays the phase of the video signal by t1 and DL2 delays the phase by t2. Thus the aperture and shape of video input signal A are corrected to form video signal F. RV1 and RV2 control the right and left horn levels. RV3 controls the aperture gain. RV4 controls the aperture level 0 Vp-p. External control RV102 (PEAKING) controls the aperture levels. An aperture switching circuit is provided as an additional feature. When the external aperture switch is off, 0V or 5V is supplied through R39 to switch the aperture mode.
(The aperture is off for 0V and on for 5V.)

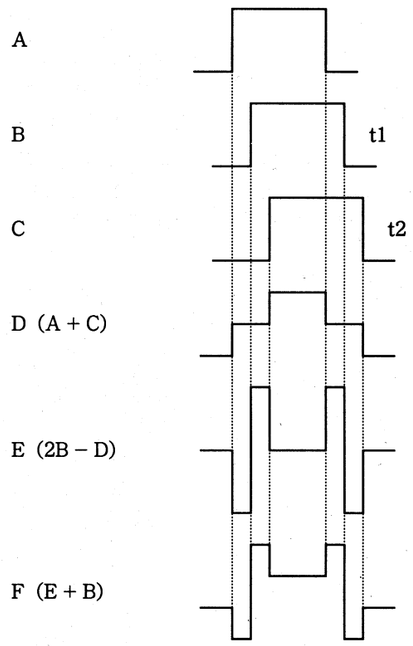


Fig. 3-2

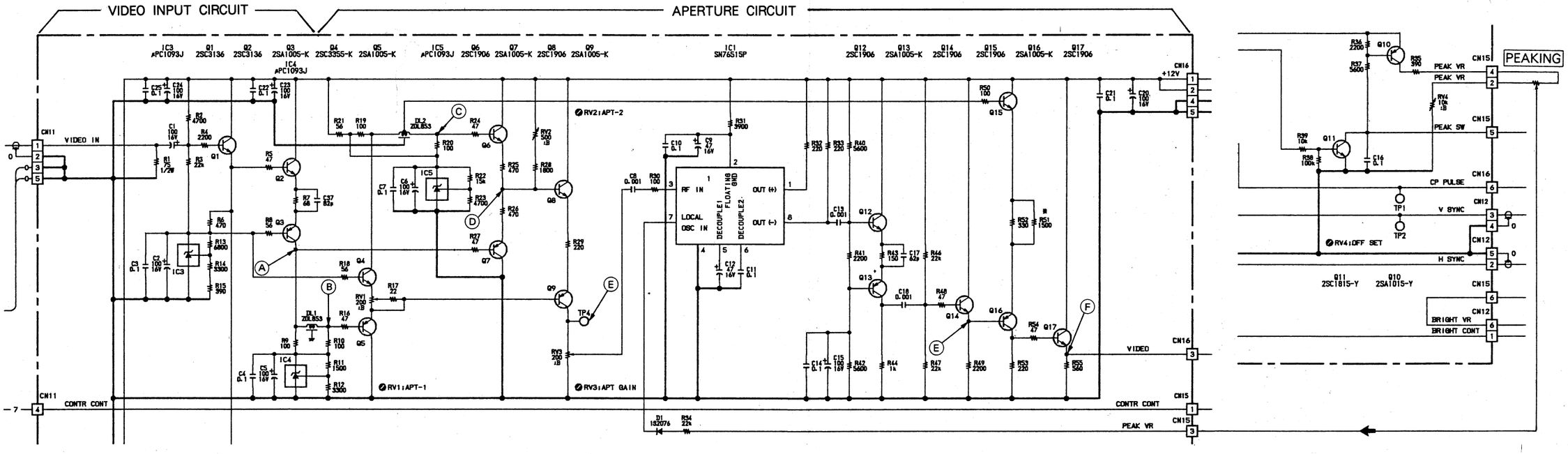


Fig. 3-1. Video Input Circuit and Aperture Circuit

3-3. Video Output Circuit (PD-160 Board)

The video signal whose aperture has been corrected enters pin 1 of IC1. IC1 has a contrast circuit and backporch clamp circuit operated by feedback from the video output.
Pin 4 is connected to external control RV3 (CONTRAST) to control the video level. The clamp pulse enters pin 12.
The video signal output from pin 8 goes to Q1 and Q2, where it is converted into a low-impedance equivalent, and enters IC4.

The video signal converted into a low impedance equivalent is amplified by the video output amplifier circuit of IC4 to drive the CRT cathode.

A contrast control circuit consisting of IC2 is provided as an additional feature. A voltage of 0V to 5V (preset voltage is 2.5V) is supplied to this circuit through R5 to control the contrast.

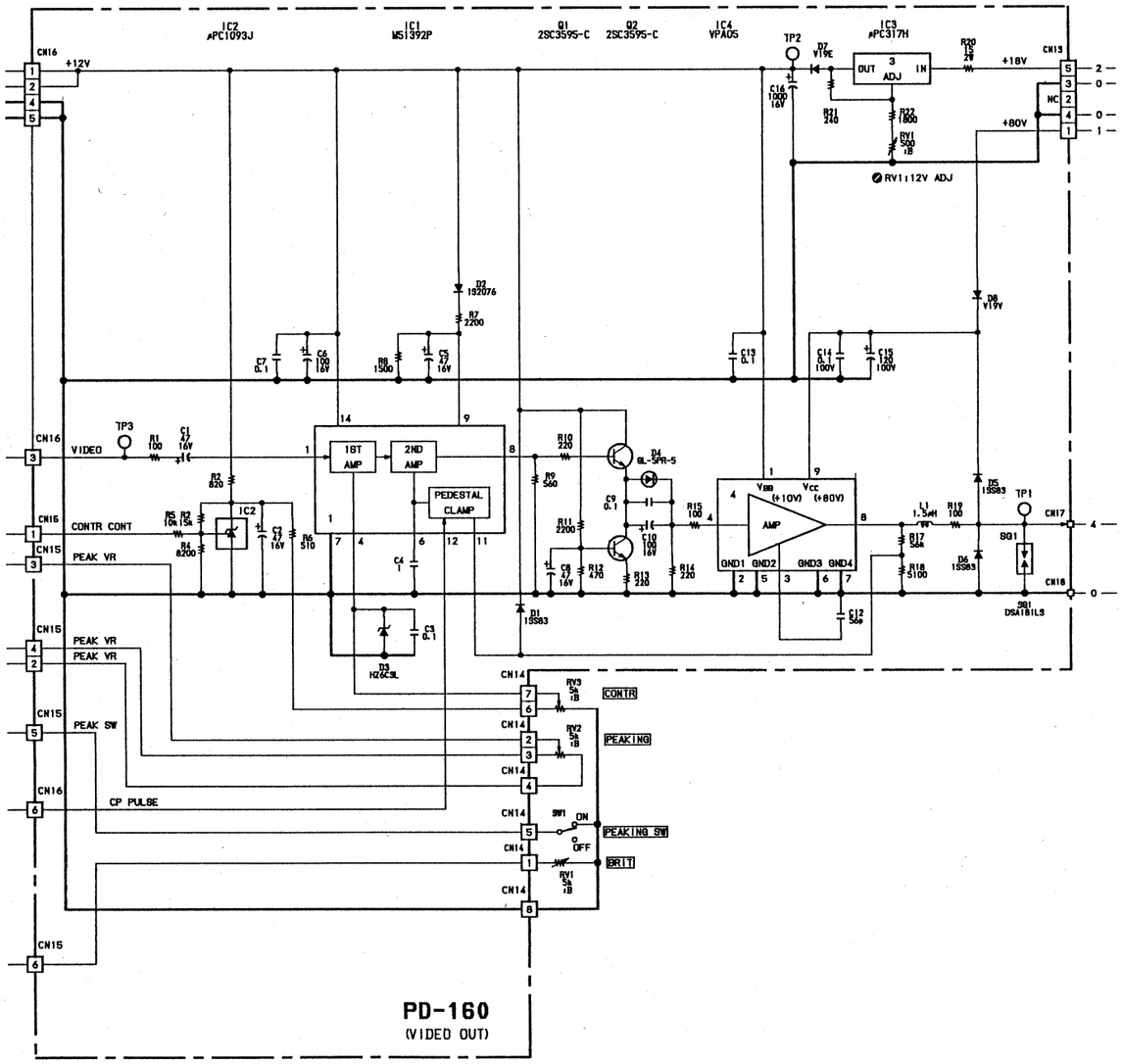


Fig. 3-3. Video Output Circuit

3-4. Sync Separating Circuit and Pulse Smoothing Circuit (PD-159 Board)

The composite video signal whose impedance has been lowered by emitter follower Q1 enters pin 1 of IC2. IC2 operates as the sync separating circuit. This circuit obtains a separated composite sync signal at pin 4, which is applied to the horizontal oscillation circuit through R78 as a horizontal sync signal.

This signal is also integrated and its waveform is shaped.
The resulting signal is then applied to the vertical oscillation circuit as a vertical sync signal.

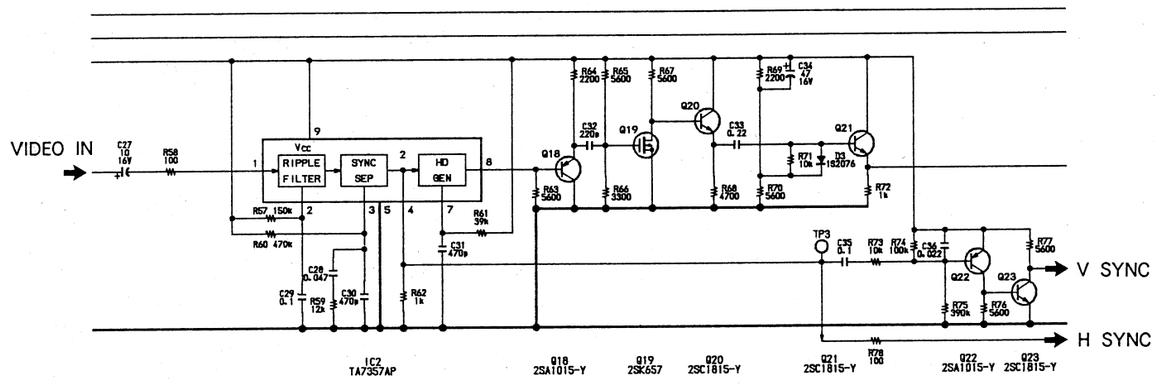


Fig. 3-4. Sync Separating Circuit and Pulse Smoothing Circuit

3-5. Horizontal Oscillation and Deflection Circuit (PD-158 Board)

The horizontal sync signal enters pin 1 of IC2.
IC2 incorporates a horizontal oscillation circuit. A horizontal pulse is applied to pin 5 as the AFC comparison pulse from horizontal output transformer T2.
RV5 controls the left and right positions on the screen with H POSI.
Control RV6 controls the horizontal free oscillation frequency with H HOLD. The horizontal oscillation pulse from pin 13 is applied to the base of Q2 through Q1 and T1. Q2, Q4, C25, and T2 supply a sawtooth wave current to the connected horizontal deflection yoke to perform horizontal deflection.
RV7 controls the left and right positions on the screen with H CENT.
LZ controls linearity on the screen with H LIN.

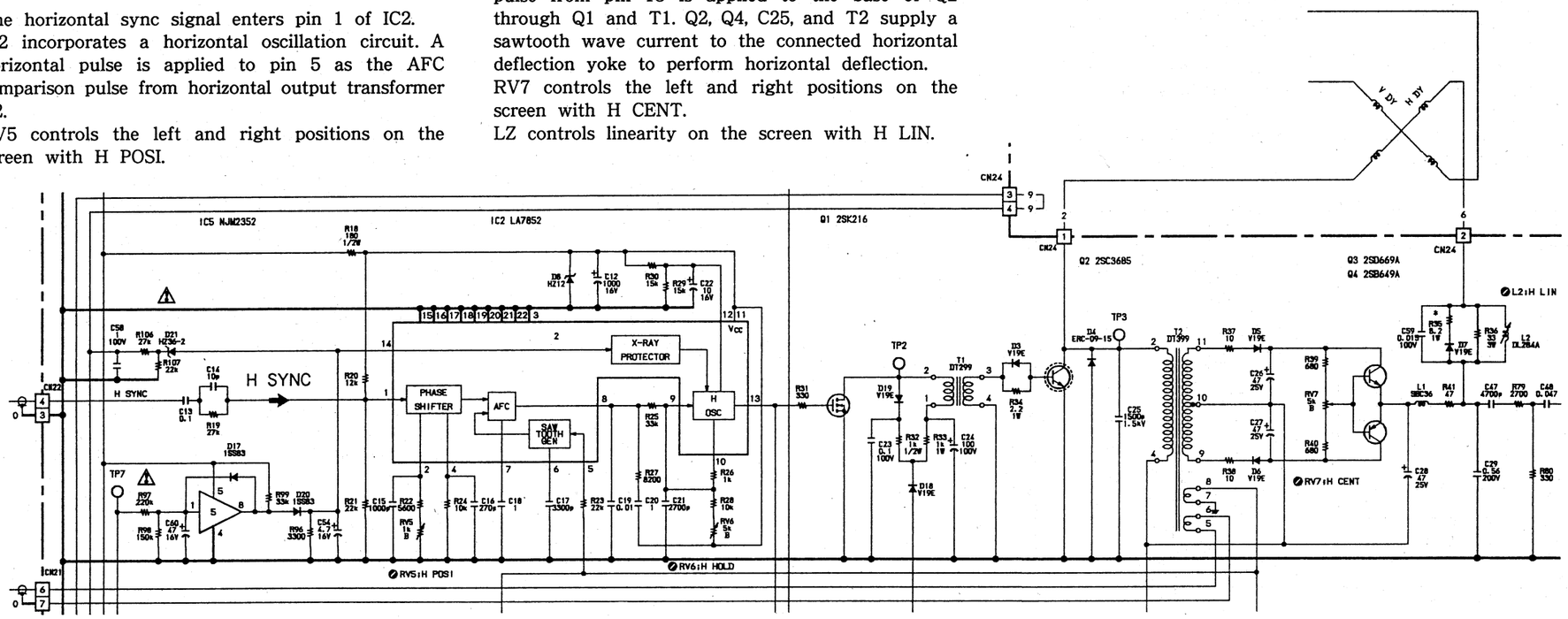


Fig. 3-5. Horizontal Oscillation and Deflection Circuit

3-6. Horizontal Size Circuit (PD-158 Board)

The chopper regulator circuit consists of IC3, Q6, D11, C13, and C37. Control RV8 regulates the voltage to + 80V, which is supplied to this circuit as the horizontal deflection power supply. RV8 controls the horizontal screen size with H SIZE.
A horizontal deflection pulse is applied to pin 6 through Q5, which triggers IC3 for oscillation.

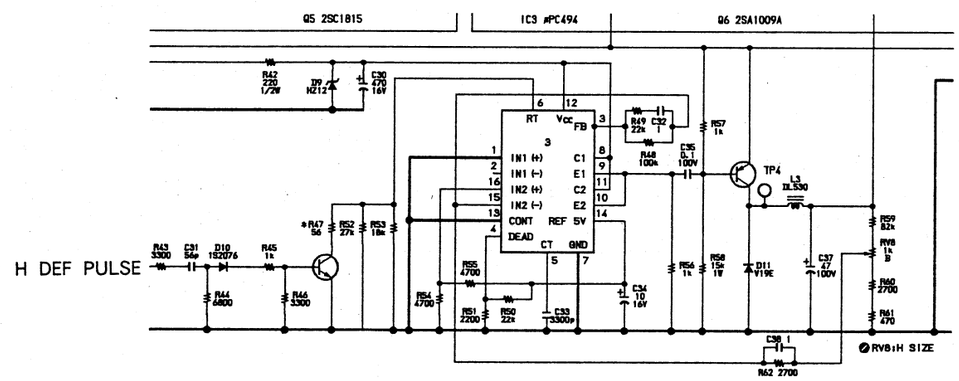


Fig. 3-6. Horizontal Size Circuit

3-7. Blanking Circuit (PD-158 Board)

The blanking circuit mixes the horizontal deflection pulse supplied from the horizontal output transformer (T2) and vertical deflection pulse supplied from the vertical deflection circuit (IC1) at D12. The resulting pulse is then inverted and amplified by Q9 and Q10, and supplied to the first CRT grid as a blanking pulse. This blanking circuit also controls the brightness by changing the voltageat the first CRT grid with brightness control RV101.
Control RV9 is a SUB BRIGT controller which controls the range of the maximum brightness. The brightness control circuit is provided as an additional feature. This circuit consists of Q11, Q12, and IC4. It supplies a voltage of 0V to 5V (preset voltage is 2.5V) through R78 to control the brightness.

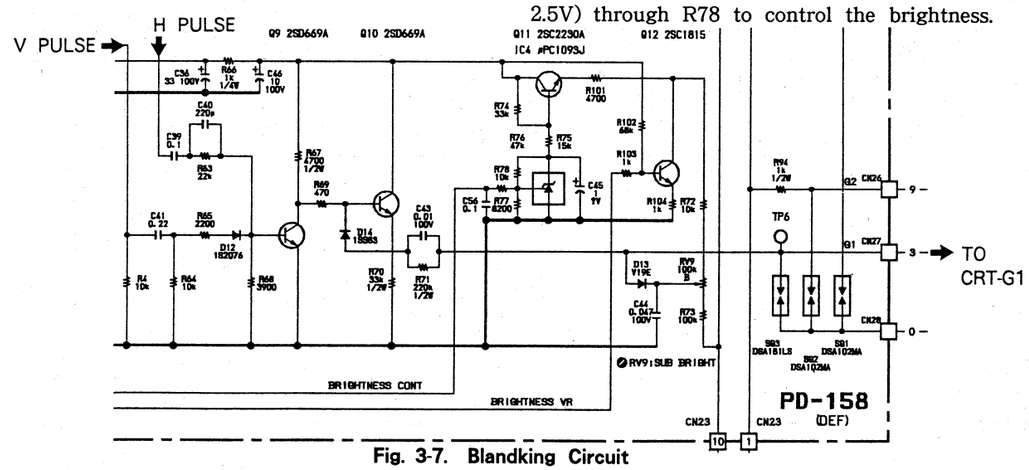


Fig. 3-7. Blandking Circuit

3-8. Vertical Oscillation and Deflection Circuits (PD-158 Board)

The vertical sync signal enters pin 5 of IC1. IC1 incorporates vertical oscillation and deflection circuits. These circuits supply a sawtooth current to the vertical deflection yoke connected to pin 12 to perform vertical deflection.

RV1 controls the vertical free oscillation frequency with V HOLD so that it becomes slightly lower than the vertical frequency.
RV2 controls the vertical screen size with V SIZE.
RV3 controls the vertical linearity on the screen with V LIN.
RV4 controls the top and bottom positions on the screen with V CENT.

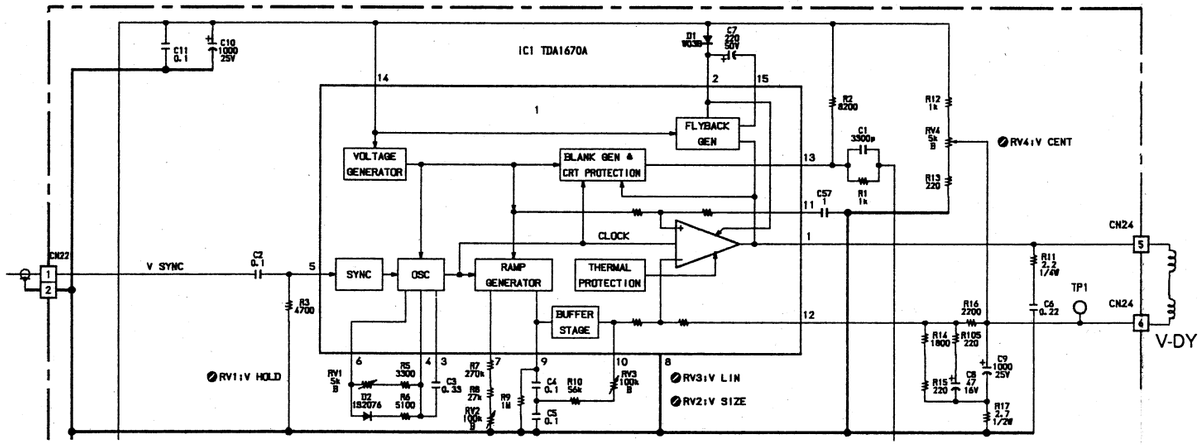


Fig. 3-8. Vertical Oscillation and Deflection Circuits

3-9. High Voltage Circuit (PD-161 Board)

A horizontal oscillation pulse is supplied from pin 13 of the horizontal oscillation circuit IC2 to the gate of Q1 through R1. The pulse passes through Q1 and T1 and enters the base of Q2, generating a high voltage pulse with Q2, D2, C3, and T2. The high voltage pulse is rectified, and supplied to the anode of the CRT.
A high fluctuation voltage detected with R6 and C7 is applied to IC1 (1/2) and amplified, then supplied to the base of Q4 through Q5 and Q3. If the high voltage decreases when the brightness of CRT increases, the base potential of Q4 decreases. To stabilize the high voltage, the collector voltage is increased. Flyback transformer TZ generates the heater voltage, focus voltage (G4), and screen voltage (G2), and G1 voltage and supplies them to the CRT electrode.

3-10. X-ray Protection Circuit (PD-161, PD-245, and PD-158 Boards)

This protection circuit consists of IC1, D14, and Q6 on the PD-161 board and prevents the CRT from emitting X-ray in excess of the standard rating. This phenomenon may occur because of an abnormal increase in high voltage.
An abnormal increase in high voltage resulting from trouble in the high-voltage circuit causes the output of IC1 (1/2) to be fixed to high or low. When the output of IC1 (1/2) is fixed to low, the base voltage of Q3 is decreased by the circuit consisting of IC1 (2/2), Q14, and Q6 to reduce the collector voltage of Q4, thereby reducing the high voltage.
The protector control voltage is detected by a circuit consisting of IC1 and D5 when the output of IC1 (1/2) is low, and it is detected by D6 when the output of IC1 (1/2) is high. This control voltage passes through pin 6 of connector CN31 on the PD-161 board and pin 3 of connector CN23 on the PD-158 and is applied to the protector circuit built into IC5 and IC2 via R97 in the PD-158 board. This protector circuit stops the operation of the horizontal oscillation circuit, thereby causing the high voltage to be held.

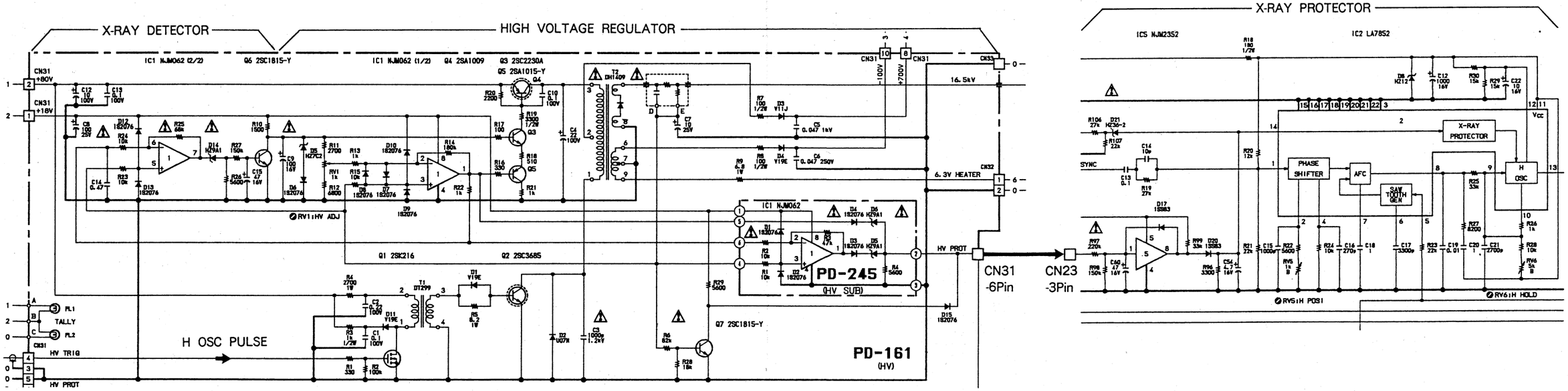


Fig. 3-9. High Voltage Circuit and X-ray Protection Circuit

3-11. Switching Power Supply Circuit (PA-162 Board)

An AC voltage of 95V to 200V is applied across pin 1 and pin 2 of connector CN41. IC1 generates a pulse synchronized with the horizontal oscillation frequency, thus driving Q2 by controlling the pulse width. The pulse increased by transformer T1 generates + 18V with the rectifier and filter circuits consisting of D6, L2, L3, C15 to C18, and IC2 and with the three-pin regulator circuit.
This pulse also generates + 80V with the rectifier and filter circuits consisting of D7, L4, L5, C19 to C22, and IC3 and with the regulator circuit.
The input voltage is insulated from the secondary voltages of transformer T2, so it is adjusted to + 80V with RV1.

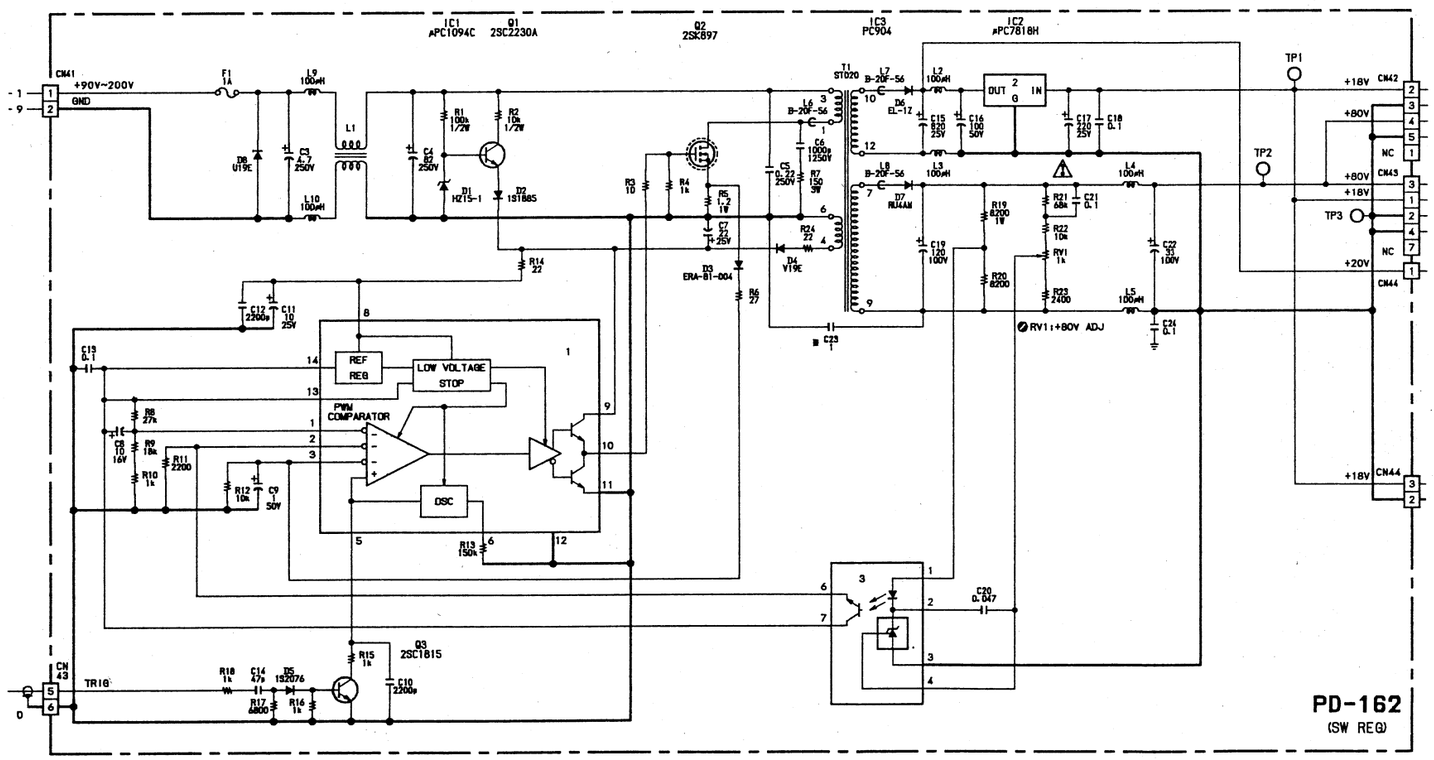


Fig. 3-10. Switching Power Supply Circuit

3-12. Horizontal Dynamic Focus Circuit (PD-158 Board)

A signal having horizontal parabolic waveforms generated by the horizontal linearity circuit is inverted and amplified by Q7 and Q8 to generate a maximum dynamic focus signal of approximately 300 Vp-p.
This dynamic focus signal voltage is given in the superposition of RV10 midpoint voltage of − 100 to 700V provided by flyback transformer T2 on the PD-161 board, then supplied to the CRT at its G4 focus electrode.

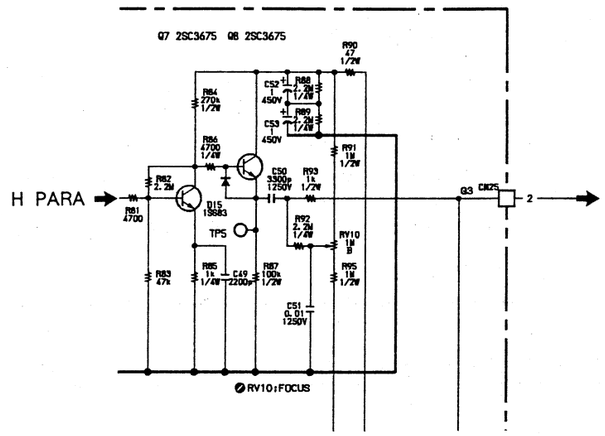
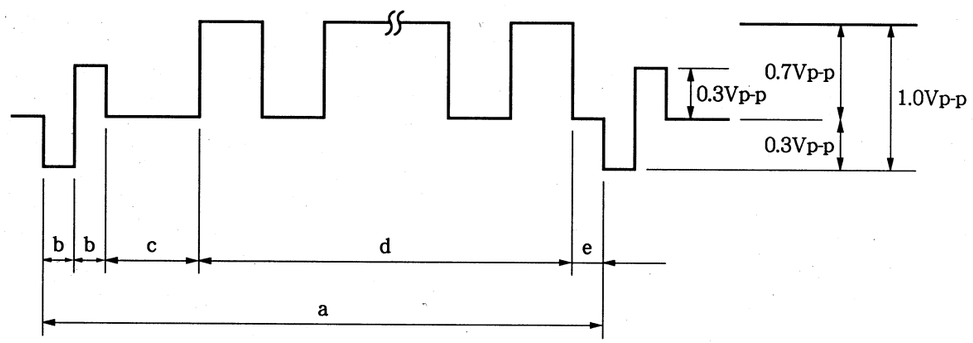


Fig. 3-11. Horizontal Dynamic Focus Circuit

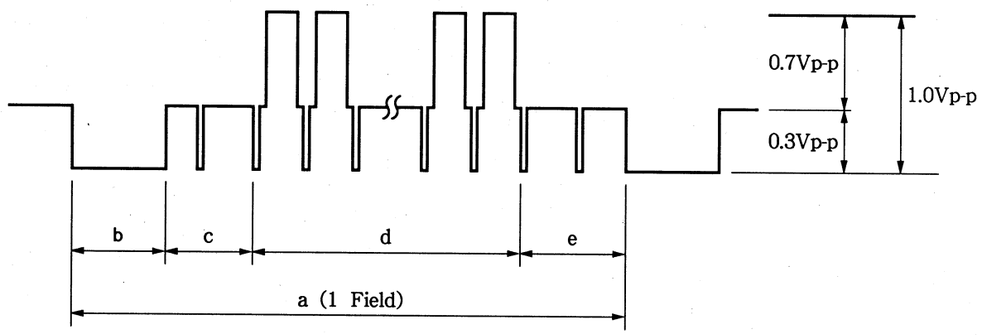
3-13. HDVS Sync Signal

(1) Horizontal sync signal



a. H Sync Period : 29.63 μsec
b. H Sync Pulse Width : 0.59 μsec
c. Back Porch : 2.29 μsec
d. Display Time : 25.86 μsec
e. Front Porch : 0.30 μsec

(2) Vertical sync signal



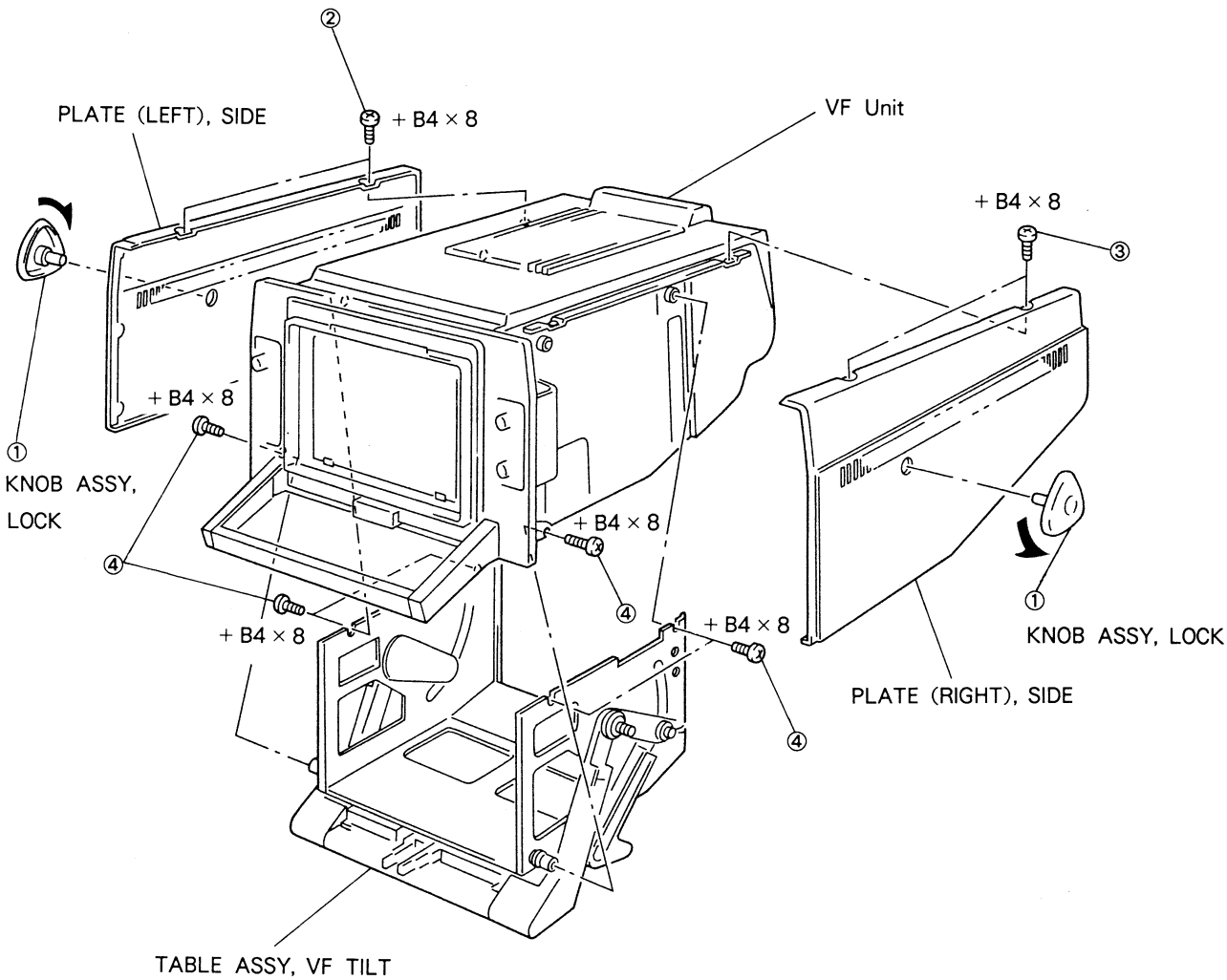
a. Vertical Sync Period : 563 H
b. Vertical Sync Pulse Width : 5 H
c. Back Porch : 35 H
d. Display Time : 518 H
e. Front Porch : 5 H

SECTION 4
MAINTENANCE

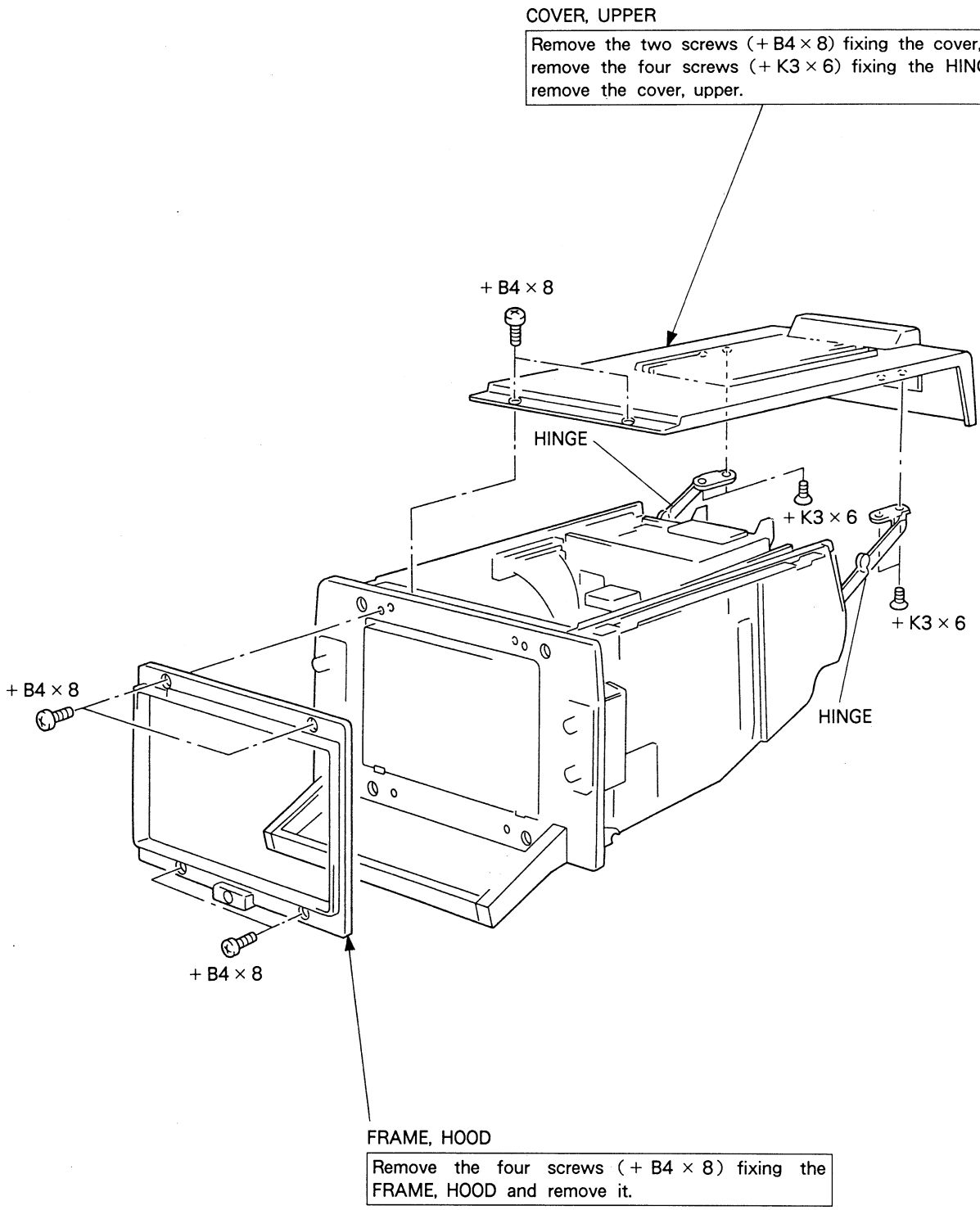
4-1. REMOVAL OF CABINET

4-1-1. Removal of Cabinet (1)

1. Loosen the KNOB ASSY, LOCK ① and remove it.
2. Remove the two screws ② (+ B4 × 8) fixing PLATE (LEFT), SIDE and remove it.
3. Remove the two screws ③ (+ B4 × 8) fixing PLATE (RIGHT), SIDE and remove it.
4. Remove the six screws ④ (+ B4 × 8) fixing TABLE ASSY, VF TILT and remove it.



4-1-2. Removal of Cabinet (2)

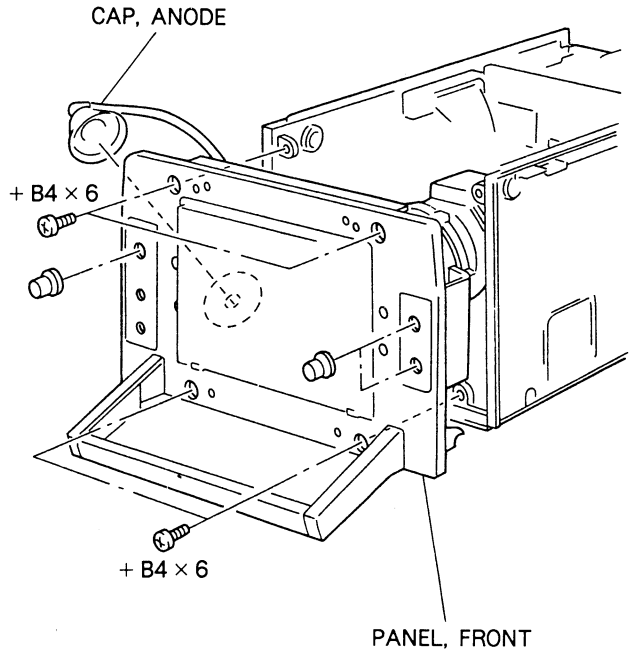

COVER, UPPER
Remove the two screws (+ B4 × 8) fixing the cover, upper, remove the four screws (+ K3 × 6) fixing the HINGE and remove the cover, upper.
+ B4 × 8
HINGE
+ K3 × 6
+ K3 × 6
+ B4 × 8
HINGE
+ B4 × 8
FRAME, HOOD
Remove the four screws (+ B4 × 8) fixing the FRAME, HOOD and remove it.

4-2. REPLACEMENT OF MAIN PARTS

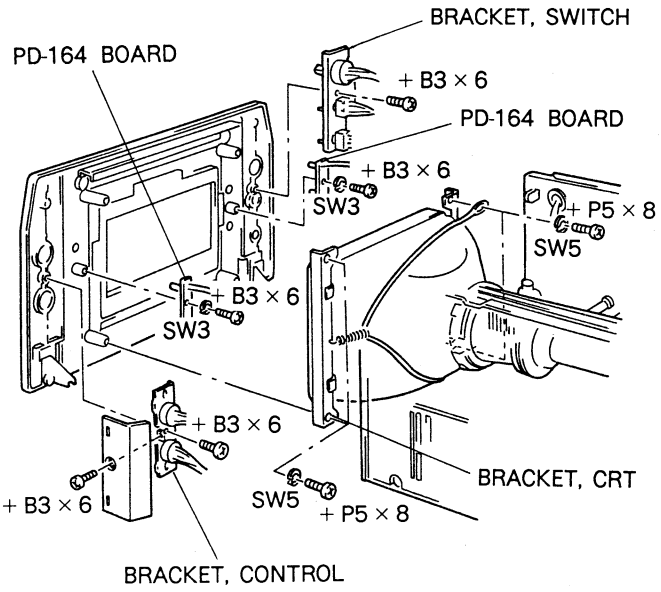
Note : When replacing or repairing the main parts, place the unit in a place with ample space around, such as on a work bench.
Take utmost care to prevent possible danger.

4-2-1. Replacement of CRT

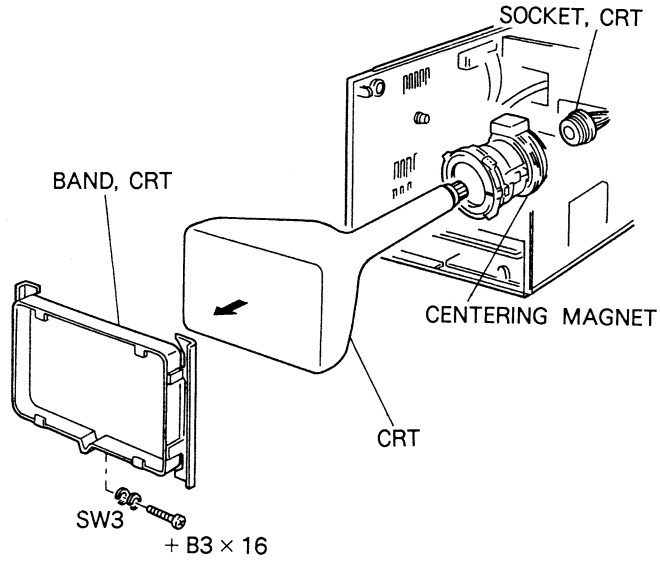
Step 1. Remove the cabinet referring to 4-1. REMOVAL OF CABINET.
Step 2. Pull out the "BRIGHT", "CONTRAST" and "PEAKING" knobs.
Step 3. Remove four fixing screws (+ PS4 × 10) securing the front panel and remove the front panel with the CRT.
Step 4. Turn over the cap, anode, and remove it holding the pin in it with tweezers, etc.



Step 5. Remove the three fixing screws (+ B3 × 6) securing the bracket, switch and the bracket, control, and remove them.
Step 6. Remove the four fixing screws (+ P5 × 8) securing the bracket, CRT.
Step 7. Remove the two fixing screws (+ B3 × 6) securing the two PD-164 boards.



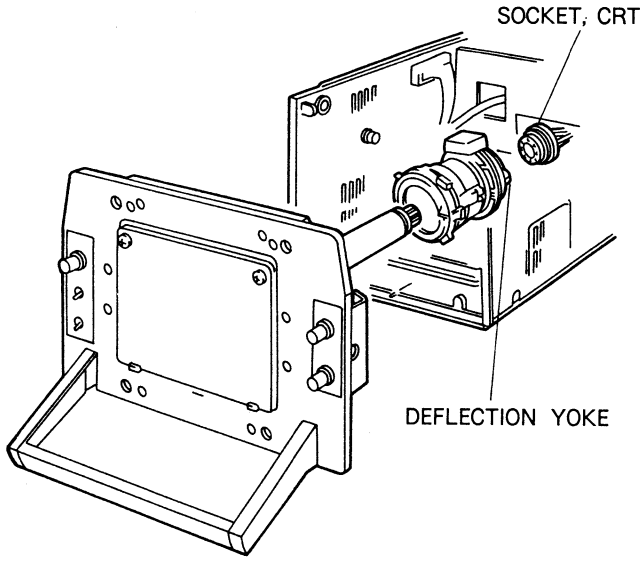
Step 8. Remove a fixing screws (+ B3 × 16) securing the BAND, CRT.
Step 9. Remove the SOCKET, CRT from the CRT.
Note : As the CRT pins are bent easily, be carefull in handling it.
Step 10. Loosen the screws securing the centering magnet, and pull out the CRT in the direction indicated of the arrow.



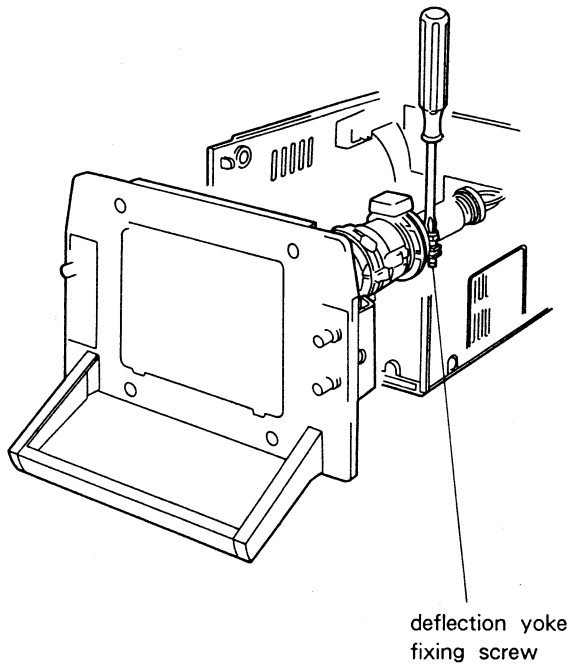
Step 11. Reverse the procedure above when reassembling.
Step 12. Be sure to carry out DEFLECTION SYSTEM ADJUSTMENT.

4-2-2. Replacement of Deflection Yoke

Step 1. Remove the TABLE ASSY, VF TILT, PLATE (RIGHT), SIDE, PLATE (LEFT), SIDE, COVER, UPPER and FRAME, HOOD referring to 4-1. REMOVAL OF CABINET.
Step 2. Remove the PANEL, FRONT referring to step 2 and 3, 4-2-1. Replacement of CRT.
Step 3. Remove the DEFLECTION YOKE and the SOCKET, CRT from the CRT.



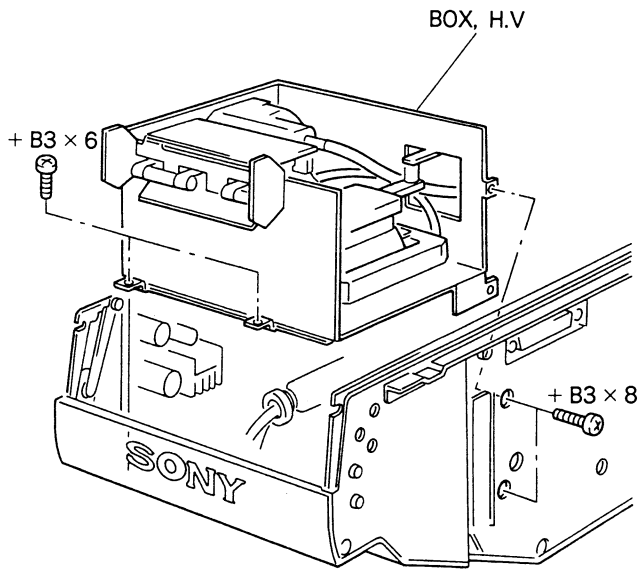
Step 4. Re-install the new deflection yoke by reversing the step 3.
Step 5. Re-install the PANEL, FRONT by reversing the step 2.
Step 6. Be sure to carry out DEFLECTION SYSTEM ADJUSTMENT.



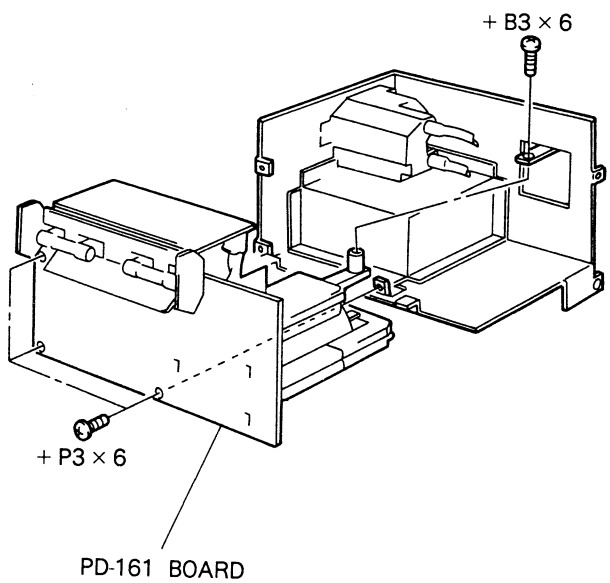
4-2-3. Removal of High Voltage Block

Step 1. Remove the TABLE ASSY, VF TILT, PLATE (RIGHT), SIDE, PLATE (LEFT), SIDE, COVER, UPPER and FRAME, HOOD referring to 4-1. REMOVAL OF CABINET.

Step 2. Remove the four fixing screws (+ B3 × 6, + B3 × 8) securing the BOX, H.V, and remove it.

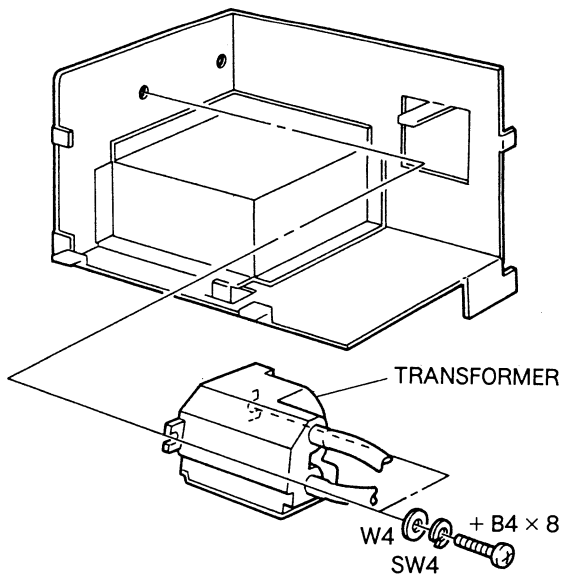


Step 3. Remove the four fixing screws (+ B3 × 6, + P3 × 6) securing the PD-161 BOARD.



Step 4. Remove a fixing screw (+ B4 × 8) securing the TRANSFORMER and remove it.

Note : High Voltage Block is assembled the cord.



4-3. PRECAUTIONS ON MAINTENANCE

4-3-1. Precaution on Replacement Parts

(1) Safety Related on Components Warning
Components identified by shading marked with ⚠ on the exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony Parts whose part numbers appear in this manual or in Service bulletins and service manual supplement published by Sony.

(2) Standardization of Parts
Repair parts supplied from Sony Parts Center may not be always identical with the part which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts". This manual's exploded views and electrical spare parts list are indicating the parts number of "the standardizatio n genuine parts at present".

(3) Stocked of Parts
The parts marked with "S" in the SP column of the exploded views and electrical spare parts list are normally required for routine service work. Order for parts marked with "O" will be processed, but allow for additional delivery time.

(4) Units of Capacitors, Inductors, and Resistors
The following units are omitted in the schematic diagrams, exploded views, and electrical parts lists unless otherwise specified ;
Capacitor : μF
Inductor : μH
Resistor : Ω

4-3-2. Precaution on Maintenance

(1) Handle the CRT body and the controls on the neck of the CRT with utmost care and do not apply excessive force to the CRT.

(2) High voltage of 16KV and high voltage pulse of 1KVp-p exist on the high voltage and deflection circuits. Take utmost care when checking the unit while it is operating ; especially high voltage circuit and deflection circuit. 100V and 1KV power lines are installed on the printed board. Do not touch the printed board with bare hand or tools.

(3) Before touching the CRT for checking purpose or replacing it, cut off the power, remove the high voltage anode cap and discharge the accumulated electricity on the anode to the ground using circuit tester lead, etc.
Disconnect the power cord from the AC power source to prevent possible danger caused by accidental turning on the power.

(4) Dust or dirt accumulated on the unit may cause unforeseen trouble. Periodically check and clean wiring subjected to high voltage, and CRT face. Clean especially around anode cap and the high voltage rectifier.

4-3-3. Trouble shooting

(1) First, check cables, connectors and contacts for loosening and disconnection, and signal input and power supply conditions before servicing the viewfinder.

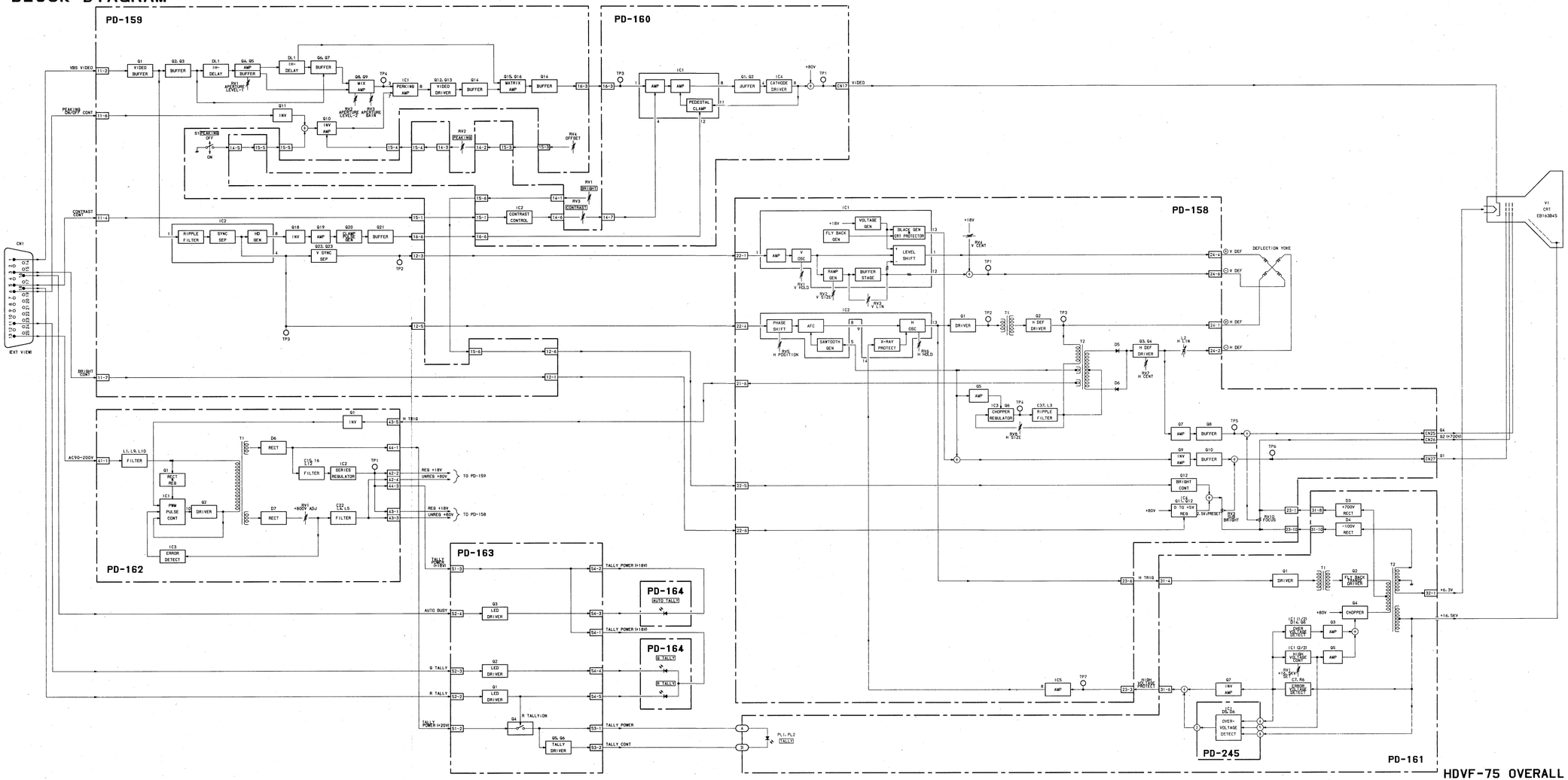
(2) Next, check the position of the controls.
If controls are not set at appropriate position, no picture may appear ; for example, if CONTRAST control is set at fully CCU position, no picture is produced.

(3) Trouble may concern either a signal or plural circuits. The following table shows symptoms and circuits to be checked.

SYMPTOM \ CIRCUIT TO BE CHECKED	Power regulation circuit	Video circuit	Sync circuit	Blanking circuit	Horizontal oscillating circuit	Horizontal output circuit	Vertical oscillating circuit	Vertical output circuit	High voltage drive circuit	High voltage regulation circuit	Focus power supply circuit	Horizontal/vertical parabola circuit	Screen circuit
Blown fuse (1A) PD-162 Board, F1	○				○	○		○	○	○			○
No raster	○			○	○	○			○	○			○
No picture	○	○											
Retrace appears				○									
Often out of sync			○		○		○						
Picture in diagonal bars			○		○								
Picture rolling			○				○						
Insufficient width in picture						○							
Insufficient height in picture							○	○					
Picture swinging	○								○	○			
No height in raster							○	○					
No width in raster					○	○							
Insufficient brightness	○	○		○	○				○	○			○
Poor focus									○	○	○	○	
No high-voltage	○				○	○			○	○			

SECTION A
BLOCK DIAGRAM

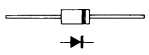
OVERALL BLOCK DIAGRAM



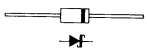
SECTION B
SEMICONDUCTOR PIN ASSIGNMENTS

The circuit diagram of IC is obtained from the IC data book published by the manufacturer.

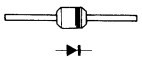
TYPE	PAGE	TYPE	PAGE
1S1885	B-2	uPC1093J	B-4
1S2076	B-2	uPC1094C	B-4
		uPC317H	B-4
1SS83	B-2	uPC494C	B-4
		uPC7818H	B-4
2SA1005	B-2		
2SA1009A	B-2	V11J	B-2
2SA1015	B-2	V19E	B-2
2SB649A	B-2	VPA05	B-2
2SC1815	B-2	W03B	B-2
2SC1906	B-2		
2SC2230A	B-2		
2SC3136	B-2		
2SC3355	B-2		
2SC3595	B-2		
2SC3675	B-2		
2SC3685	B-2		
2SD669A	B-2		
2SK216	B-2		
2SK657	B-2		
EL1Z	B-2		
ERA81-004	B-2		
ERC09-15	B-2		
GL-5PG5	B-2		
GL-5PR5	B-2		
HZ7A-1	B-2		
HZ9A-1	B-2		
HZ6C-1	B-2		
HZ9C-1	B-2		
HZ9C-2	B-2		
LA7852	B-3		
M51392P	B-3		
NJM062M	B-3		
PC904	B-3		
RU4AM	B-2		
SN76515P	B-3		
TA7357AP	B-3		
TDA1670A	B-3		
U07N	B-2		



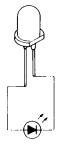
1S1885
1S2076
1SS83
EL1Z
RU4AM
WO3B



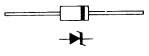
ERA81-004



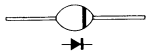
ERC09-15



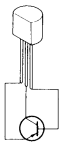
GL-5PG5 ; GREEN
GL-5PR5 ; RED



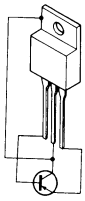
HZ ? ?A ?
HZ ? ?C ?
HZ ? ?- ?



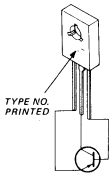
U07N
V11 ?
V19 ?



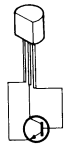
2SA1005
2SA1015



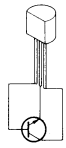
2SA1009A



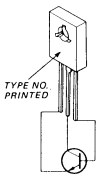
2SB649A



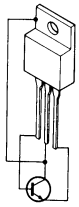
2SC1815
2SC1906
2SC2230A



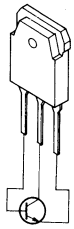
2SC3136
2SC3355



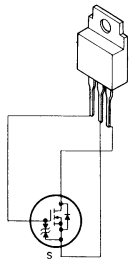
2SC3595
2SD669A



2SC3675

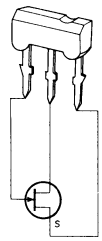


2SC3685



2SK216

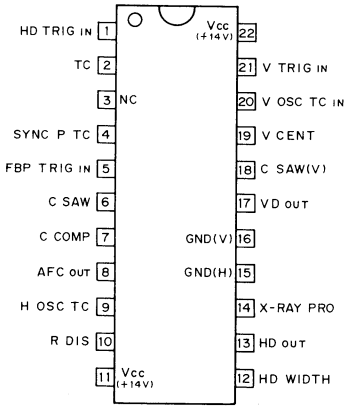
(SCALE 2/1)

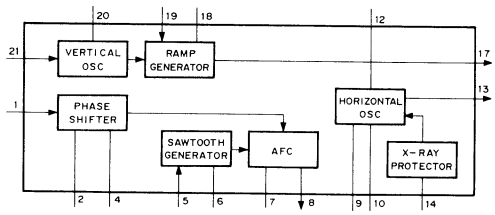


2SK657

LA7852 (SANYO)

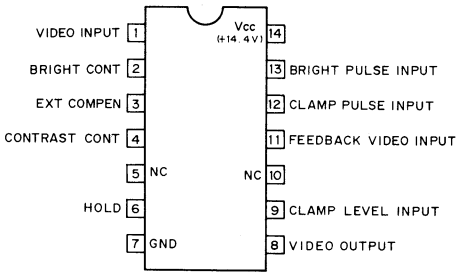
CRT DISPLAY DEFLECTION SIGNAL PROCESSING
– TOP VIEW –

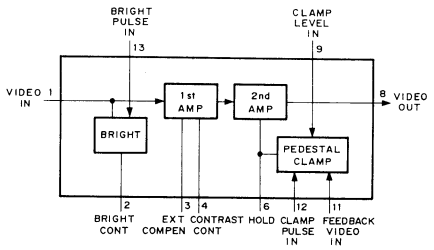




M51392P (MITSUBISHI)

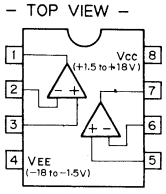
VIDEO AMPLIFIER FOR DISPLAY/MONITOR
– TOP VIEW –





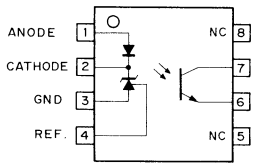
NJM062M (JRC) FLAT PACKAGE

OPERATIONAL AMPLIFIER
(JFET INPUT)
– TOP VIEW –



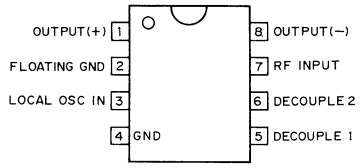
PC904 (SHARP)

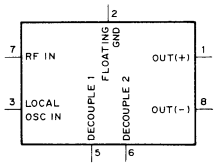
PHOTOCOUPLER
– TOP VIEW –



SN76515 (TI)

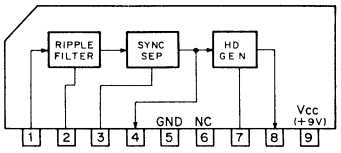
DOUBLE-BALANCED MIXER
– TOP VIEW –





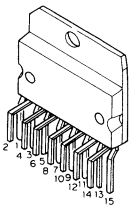
TA7357AP (TOSHIBA)

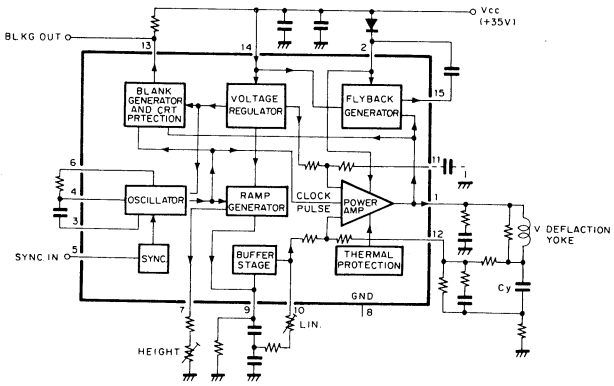
SYNC SEPARATOR/HD PULSE GENERATOR
– SIDE VIEW –



TDA1670A (PHILIPS)

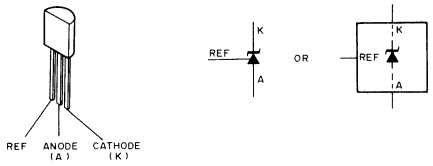
VERTICAL DEFLECTION CIRCUIT





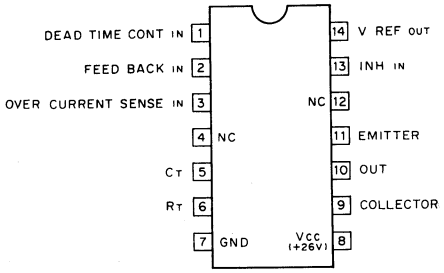
uPC1093J (NEC)

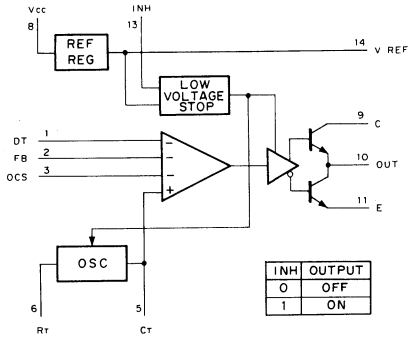
ADJUSTABLE PRECISION SHUNT REGULATOR



uPC1094C (NEC)

PWM POWER CONTROLLER
– TOP VIEW –

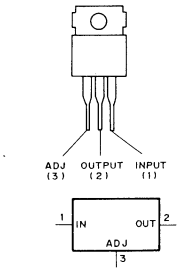




INH	OUTPUT
0	OFF
1	ON

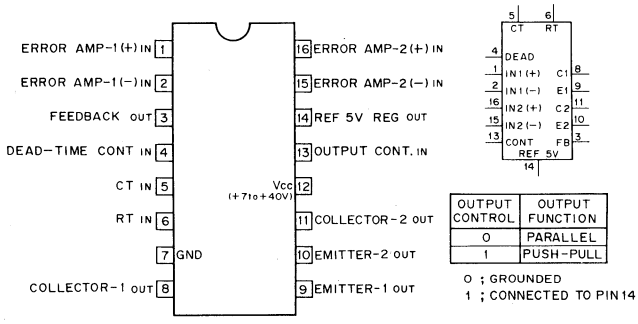
uPC317H (NEC)

ADJUSTABLE VOLTAGE REGULATOR
– TOP VIEW –



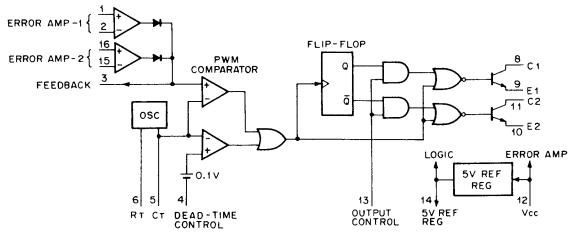
uPC494C (NEC)

PWM POWER CONTROL
– TOP VIEW –



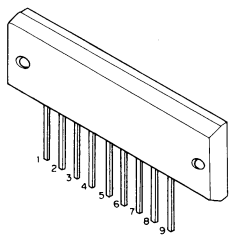
OUTPUT CONTROL	OUTPUT FUNCTION
0	PARALLEL
1	PUSH-PULL

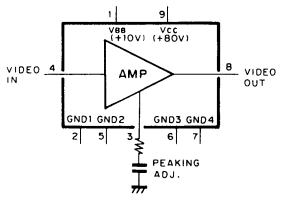
0 ; GROUNDED
1 ; CONNECTED TO PIN 14



VPA05 (SANYO)

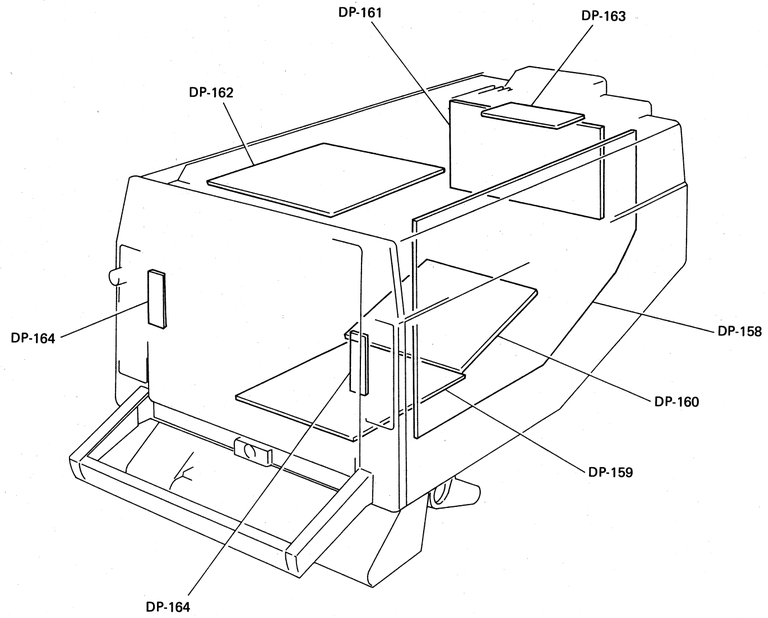
VIDEO DRIVER FOR HD-CRT DISPLAY





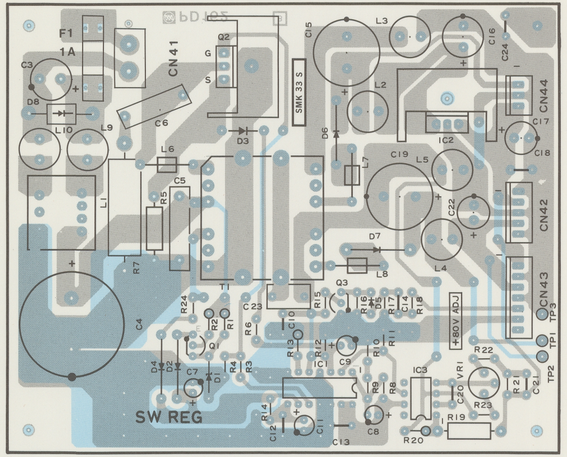
SECTION C
SCHEMATIC DIAGRAMS AND BOARD ILLUSTRATIONS

BOARD LAYOUT



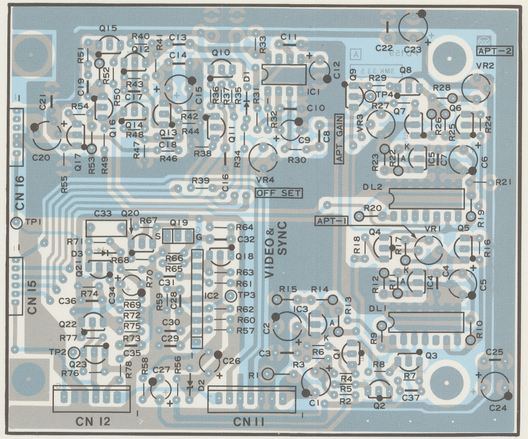
PD-162 PD-160 PD-159
PD-164 PD-163
PD-159 PD-160 PD-162
PD-163 PD-164

PD-162 BOARD



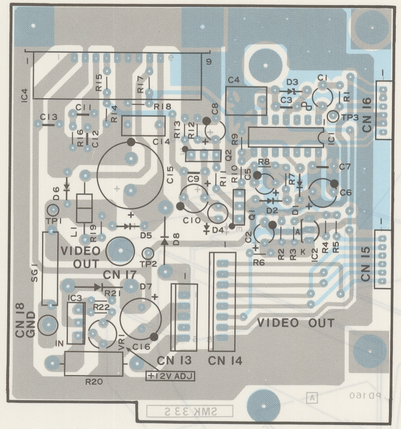
COMPONENT SIDE

PD-159 BOARD



COMPONENT SIDE

PD-160 BOARD

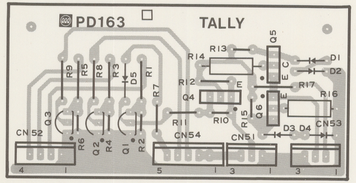


COMPONENT SIDE

PD-164 BOARD

1-628-808-11
COMPONENT SIDE

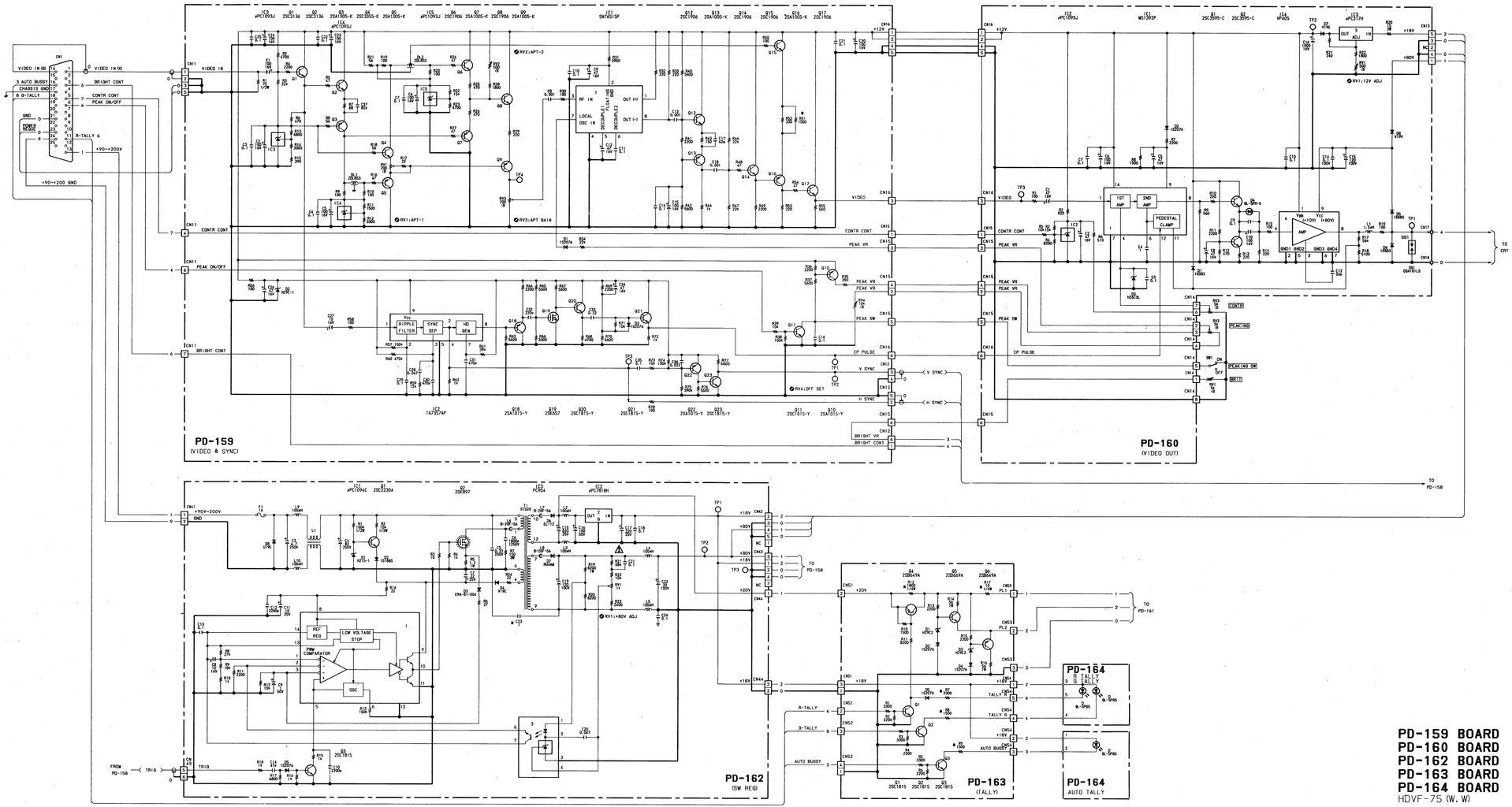
PD-163 BOARD



1-628-809-11 COMPONENT SIDE

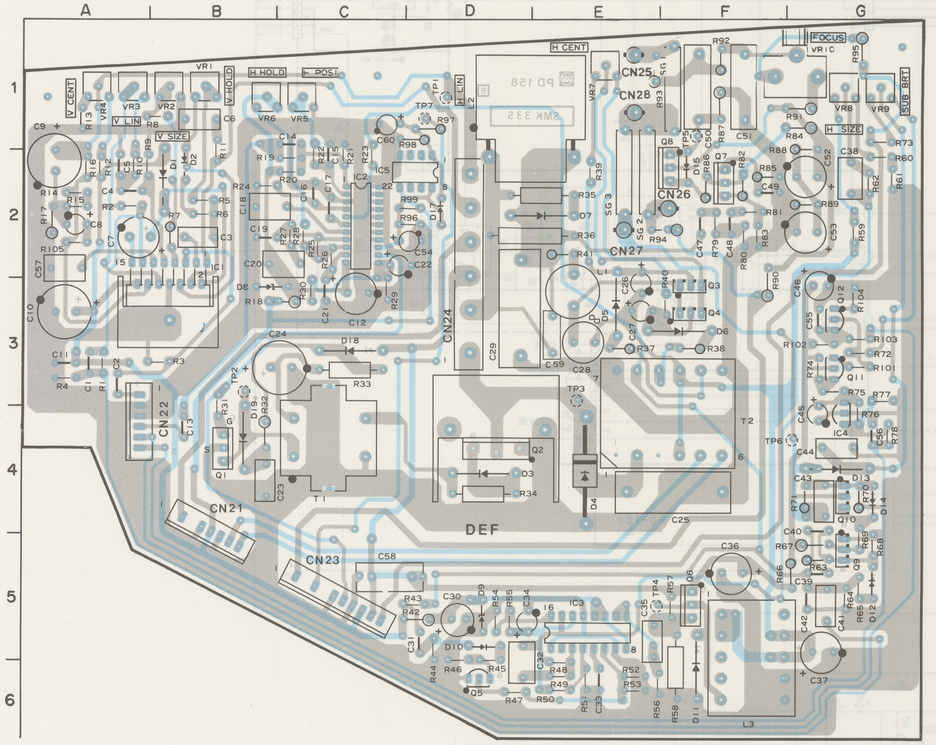
PD-159 PD-160 PD-162
PD-163 PD-164

PD-159 BOARD VIDEO AMP & SYNC SEP
PD-160 BOARD VIDEO OUTPUT AMP
PD-162 BOARD SWITCHING REGULATOR
PD-163 BOARD TALLY DRIVER
PD-164 BOARD TALLY LED



PD-159 BOARD
PD-160 BOARD
PD-162 BOARD
PD-163 BOARD
PD-164 BOARD
HDVF-75 (W. W)

PD-158 BOARD

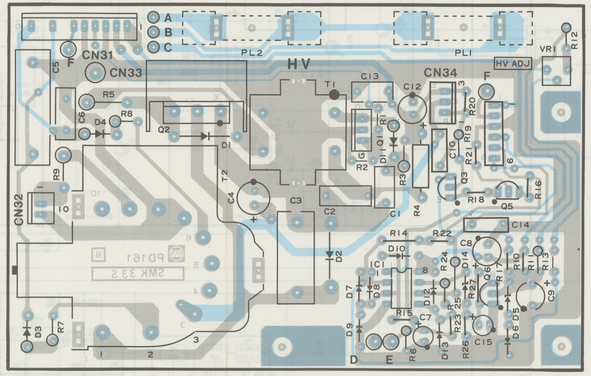


COMPONENT SIDE

PD-158

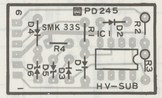
CN21	B-4	VR1	B-1
CN22	A-4	VR2	B-1
CN23	C-5	VR3	A-1
CN24	D-2	VR4	A-1
CN25	E-1	VR5	C-1
CN26	F-2	VR6	B-1
CN27	E-2	VR7	E-1
CN28	E-1	VR8	G-1
		VR9	G-1
D1	B-2	VR10	G-1
D2	B-2		
D3	D-4		
D4	E-4		
D5	E-3		
D6	F-3		
D7	E-2		
D8	B-3		
D9	D-5		
D10	D-5		
D11	F-6		
D12	G-5		
D13	G-4		
D14	G-4		
D15	F-2		
D17	D-2		
D18	C-3		
D19	B-4		
IC1	B-3		
IC2	C-2		
IC3	E-5		
IC4	G-4		
IC5	D-2		
Q1	B-4		
Q2	D-4		
Q3	F-3		
Q4	F-3		
Q5	D-6		
Q6	F-5		
Q7	F-2		
Q8	F-2		
Q9	G-5		
Q10	G-4		
Q11	G-3		
Q12	G-3		
TP1	D-1		
TP2	B-3		
TP3	E-3		
TP4	E-5		
TP5	F-1		
TP6	G-4		
TP7	D-1		

PD-161 BOARD



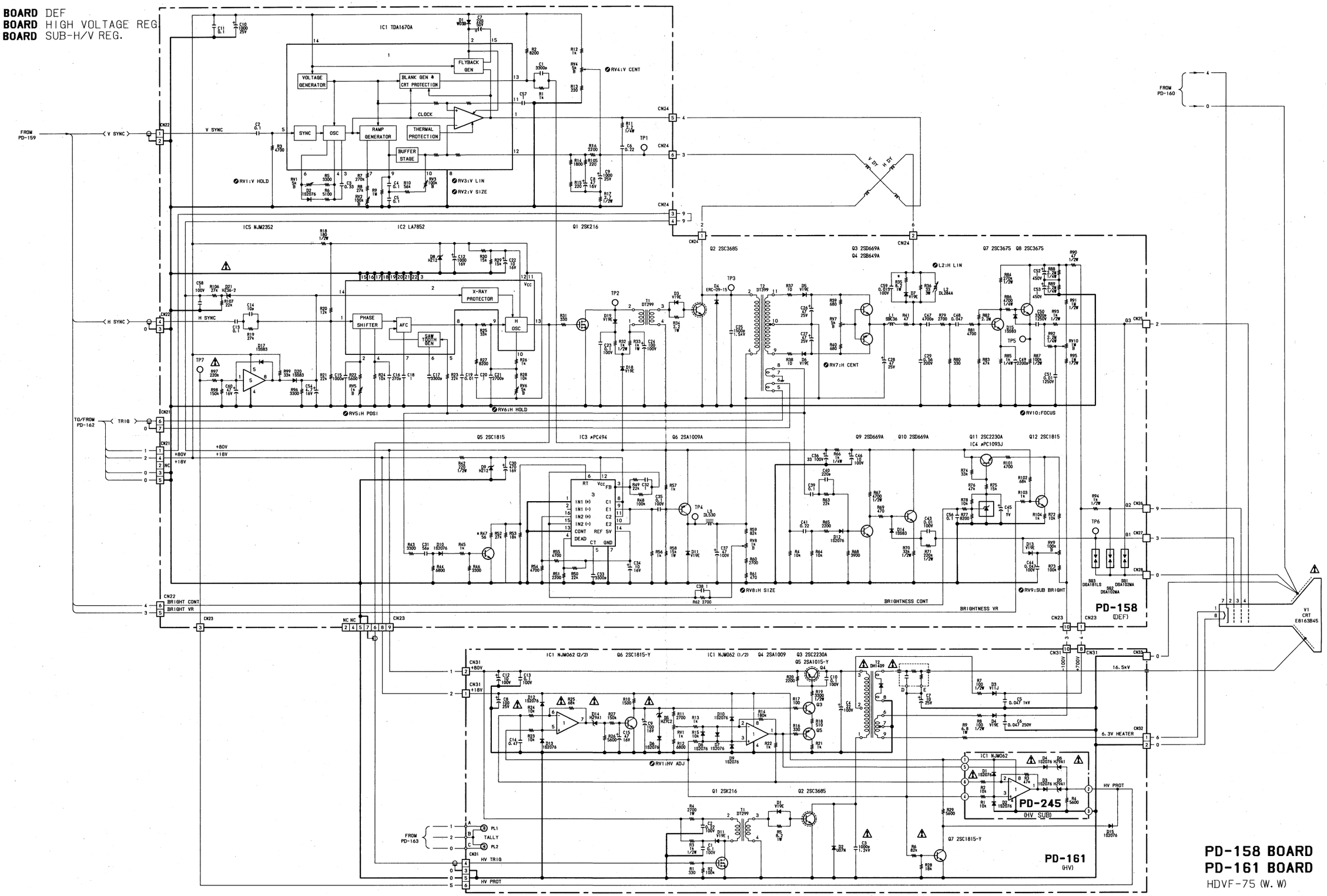
COMPONENT SIDE

PD-245 BOARD



COMPONENT SIDE

PD-158 BOARD DEF
PD-161 BOARD HIGH VOLTAGE REG.
PD-245 BOARD SUB-H/V REG.



PD-158 BOARD
PD-161 BOARD
HDVF-75 (W. W)

SECTION D
SPARE PARTS

D-1. PARTS INFORMATION

1. **Safety Related Component Warning**

   Components identified by shading marked with ⚠ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service manual supplements published by Sony.

2. Replacement Parts supplied from Sony Parts Center will sometimes have different shape and outside view from the parts which actually in use. This is due to "**accommodating the improved parts and/or engineering changes**" or "**standardization of genuine parts.**" This manual's exploded view and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present." Regarding engineering parts and diagrams changes in our engineering department, refer SECTION E. CHANGE INFORMATION.

3. **The parts marked with "S" in the SP column** of the exploded views and electical spare parts list are nomally required for routine service work. Orders for parts marked with "O" will be processed, but allow for additional delivery time.

4. Item with no parts number and/or no description are not stocked because they are seldom required for routine service.

5. **Abbreviation**

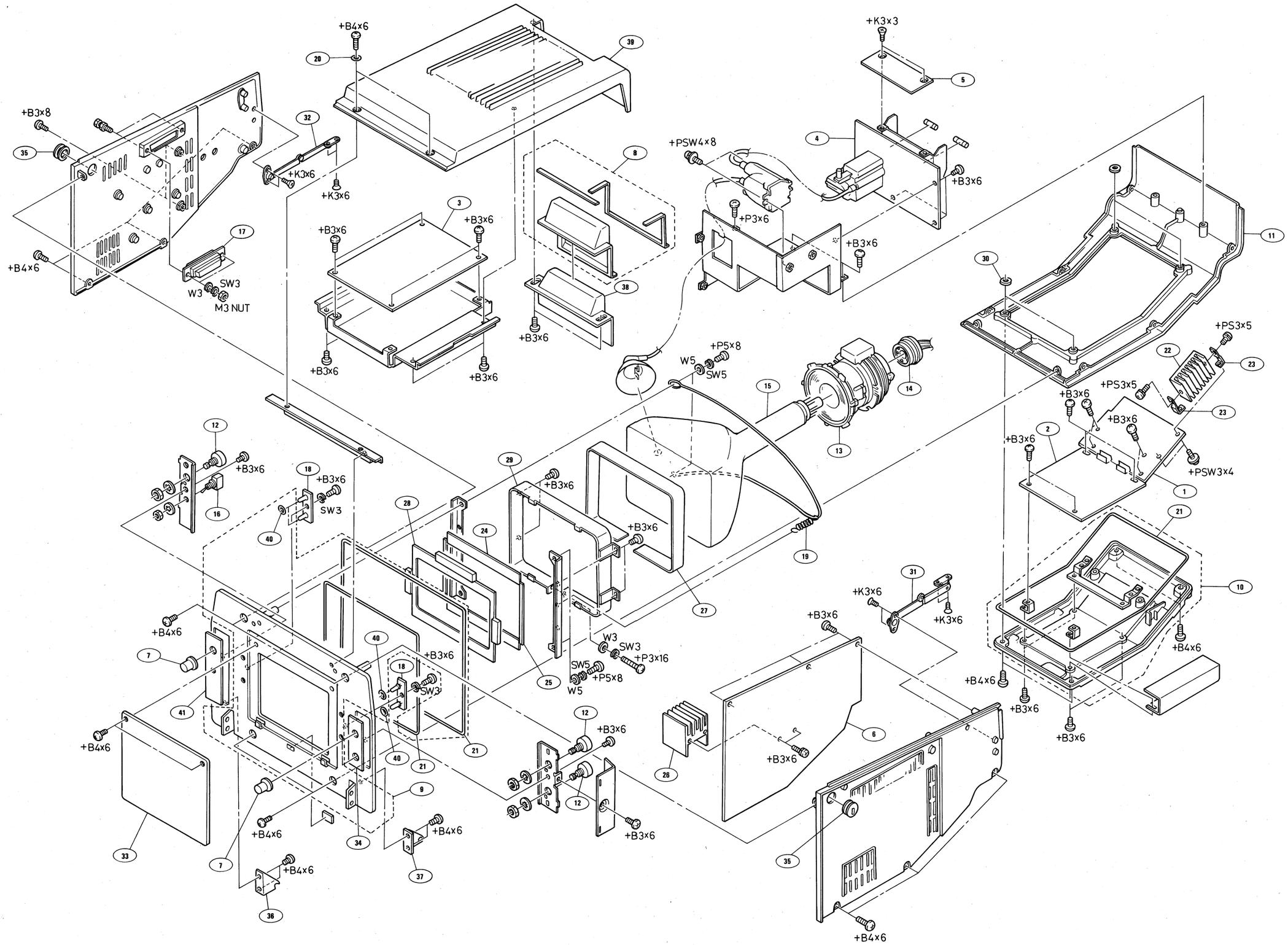
REF.No.	DESCRIPTION	REF.No.	DESCRIPTION	REF.No.	DESCRIPTION
C	CAPACITOR	**F**	FUSE	**RV**	VARIABLE RESISTOR
CN	CONNECTOR	**IC**	IC	**RY**	RELAY
CP	COMBINATION CIRCUIT BLOCK	**L**	INDUCTOR	**S**	SWITCH
		Q	TRANSISTOR	**T**	TRANSFORMER
D	DIODE	**R**	RESISTOR		

All capacitors are in micro farads unless otherwise specified.
All inductors are in micro henries unless otherwise specified.
All resistors are in ohms.

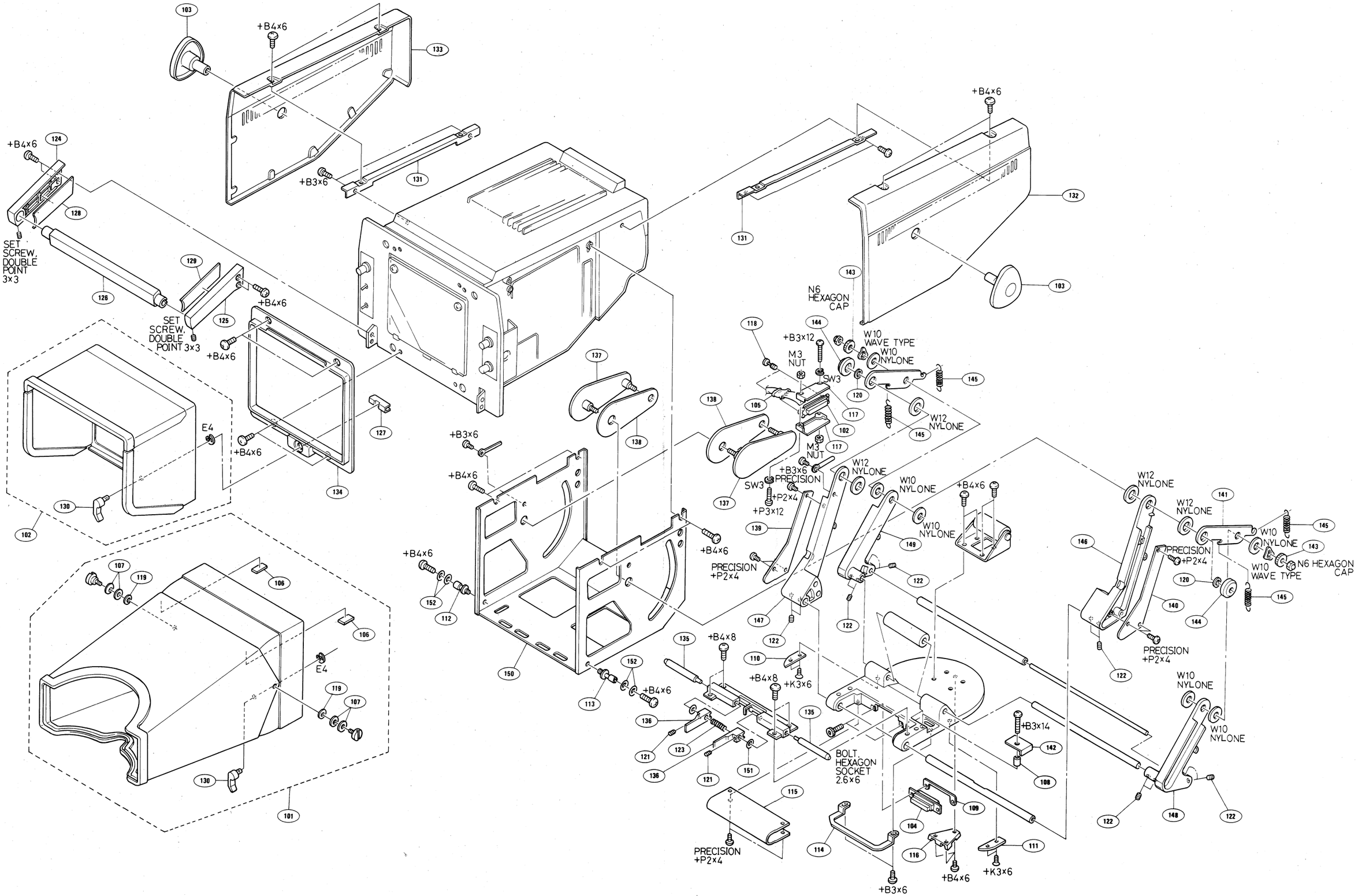
D-2. EXPLODED VIEW
CHASSIS BLOCK

Ref.No.	Parts No.	SP	Description
1	A-7513-911-A	o	MOUNTED CIRCUIT BOARD "PD-160"
2	A-7513-912-A	o	MOUNTED CIRCUIT BOARD "PD-159"
3	A-7513-913-A	o	MOUNTED CIRCUIT BOARD "PD-162"
4	A-7513-914-A	o	MOUNTED CIRCUIT BOARD "PD-161"
5	A-7513-915-A	o	MOUNTED CIRCUIT BOARD "PD-163"
6	A-7513-916-A	o	MOUNTED CIRCUIT BOARD "PD-158"
7	X-3673-635-0	s	KNOB (1) ASSY, CONTROL
8	X-4027-903-1	s	COVER (A) ASSY, TALLY
9	X-4027-904-5	o	PANEL ASSY, FRONT
10	X-4027-905-2	o	COVER (B) ASSY, BOTTON
11	X-4027-906-3	o	COVER (A) ASSY, BOTTON
12	1-224-981-00	s	RES, VAR, CERMET 5K "PEAKING" "BRIGHT" "CONTRAST"
13	1-451-334-11	s	DEFLECTION YOKE
14	1-526-837-11	o	SOCKET, CRT
15	1-546-076-11	s	CRT (E8163B45)
16	1-554-366-00	s	SWITCH, TOGGLE "PEAKING ON/OFF"
17	1-562-989-11	s	RECEPTACLE, MALE, 25P
18	1-628-808-11	o	PRINTED CIRCUIT BOARD "PD-164"
19	3-425-123-00	o	SPRING, TENSION
20	3-653-573-00	o	RING, O
21	3-672-253-11	o	RUBBER, CONDUCTIVE
22	3-697-351-01	o	HEAT SINK, VIDEO
23	3-697-352-01	o	FITTING, HEAT SINK
24	3-697-356-01	o	RUBBER (1), PANEL
25	3-697-357-01	o	RUBBER (2), PANEL
26	3-697-358-01	o	HEAT SINK, DEF
27	3-697-360-01	o	RUBBER, BAND
28	3-697-365-01	o	PANEL, INNER
29	3-697-366-01	o	BAND, CRT
30	3-701-440-21	s	WASHER, 3.5
31	4-027-907-01	o	HINGE (RIGHT)
32	4-027-908-01	o	HINGE (LEFT)
33	4-027-909-01	s	FILTER
34	4-027-911-01	s	LABEL (CONTROL)
35	4-027-922-01	o	BUSHING, RUBBER
36	4-027-925-01	o	RETAINER (LEFT), PANEL, FRONT
37	4-027-926-01	o	RETAINER (RIGHT), PANEL, FRONT
38	4-027-939-01	s	COVER (B), TALLY
39	4-027-948-11	o	COVER, UPPER
40	4-870-944-01	o	RING (P5), O
41		s	LABEL (SWITCH)

CHASSIS BLOCK



TILT TABLE ASSY

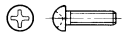


TILT TABLE ASSY

Ref.No.	Parts No.	SP	Description
101	X-3697-016-1	s	HOOD ASSY
102	X-4027-901-1	s	HOOD ASSY, INDOOR
103	X-4027-908-2	s	KNOB ASSY, LOCK
104	1-560-904-11	s	RECEPTACLE, FEMALE, 25P
105	1-935-964-15	o	HARNESS (TILT)
106	2-260-002-01	s	CUSHION
107	2-385-816-01	o	WASHER, PLATE SPRING
108	3-659-757-00	s	SPACER (4x8.5)
109	3-675-929-00	o	NUT (50P), PLATE
110	3-692-333-01	o	PLATE (LEFT)
111	3-692-334-01	o	PLATE (RIGHT)
112	3-692-342-01	o	STOPPER (A), ARM
113	3-692-343-01	o	STOPPER (B), ARM
114	3-692-364-01	o	GUARD, CONNECTOR
115	3-692-394-01	o	COVER, SHAFT, BASE
116	3-692-406-01	o	WEDGE, MOUNTING
117	3-692-529-01	o	COVER, CONNECTOR
118	3-698-104-01	s	LOCK, SCREW
119	3-701-444-21	s	WASHER, 6
120	3-701-446-21	s	WASHER, 8
121	3-701-505-00	s	SET SCREW, DOUBLE POINT 3x3
122	3-701-510-00	s	SET SCREW, DOUBLE POINT 4x4
123	3-819-914-00	o	SPRING (A), COMPRESSION
124	4-027-913-11	o	HANDLE (LEFT)
125	4-027-914-11	o	HANDLE (RIGHT)
126	4-027-915-01	o	HANDLE (A)
127	4-027-917-01	o	SPRING
128	4-027-923-01	o	PROTECTOR (LEFT), LEVER
129	4-027-924-01	o	PROTECTOR (RIGHT), LEVER
130	4-027-934-01	s	LEVER
131	4-027-935-01	o	STAY, SIDE PLATE
132	4-027-945-41	o	PLATE (RIGHT), SIDE
133	4-027-946-41	o	PLATE (LEFT), SIDE
134	4-027-951-01	o	FRAME, HOOD
135	4-027-972-01	o	PIN
136	4-027-974-01	o	LEVER, PIN LOCK
137	4-027-976-01	o	BASE, LOCK
138	4-027-977-01	o	SHEET, SLIDE
139	4-027-979-01	o	COVER, ARM
140	4-027-979-11	o	COVER, ARM
141	4-027-980-01	o	PLATE, LOCK
142	4-027-981-01	o	PLATE, BLIND
143	4-027-982-01	s	NUT
144	4-027-984-01	s	SPACER, LOCK
145	4-027-990-01	s	SPRING, TENSION
146	4-027-996-01	o	ARM (RIGHT), MAIN
147	4-027-997-01	o	ARM (LEFT), MAIN
148	4-027-998-01	o	ARM (RIGHT), SUB
149	4-027-999-01	o	ARM (LEFT), SUB
150	4-028-201-01	o	FRAME, STAND
151	4-846-520-00	s	RING (TRIP)
152	4-870-944-01	o	RING (P5), O

SCREWS

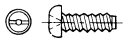
+P
Czn-N



7-682-□□□-□□

SIZE	Parts No.
3 x 3	144-01
x 4	145-01
x 5	146-01
x 6	147-01
x 8	148-01
x 10	149-01
x 12	150-01
x 14	151-01
x 16	152-01
4 x 4	158-01
x 5	159-01
x 6	160-01
x 8	161-01
x 10	162-01
x 12	163-01
x 14	164-01
x 16	165-01
x 20	166-01
x 25	167-01
x 30	168-01
x 35	169-01
x 40	170-01
x 45	171-01
x 50	172-01
5 x 8	174-01
x 10	175-01
x 12	176-01
x 14	177-01
x 16	178-01
x 20	179-01
x 25	180-01
x 30	181-01
x 35	182-01
x 40	183-01
x 45	184-01
x 50	185-01
6 x 8	186-01
x 10	187-01
x 12	188-01
x 14	189-01
x 16	190-01
x 20	191-01
x 25	192-01
x 30	193-01
x 35	194-01
x 40	195-01
x 45	196-01
x 50	197-01

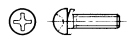
TOTSU P
BZn-N NON SLIT



7-685-□□□-□□

SIZE	Parts No.
2 x 4	102-19
2 x 5	103-19
2 x 6	104-19
2 x 8	105-19
2 x 10	106-19
2 x 12	107-19
2.6 x 4	131-19
2.6 x 5	132-19
2.6 x 6	133-19
2.6 x 8	134-19
2.6 x 10	135-19
2.6 x 12	136-19
2.6 x 14	137-19
2.6 x 16	138-19
3 x 5	144-19
3 x 6	145-19
3 x 8	146-19
3 x 10	147-19
3 x 12	148-19
3 x 14	149-19
3 x 16	150-19
3 x 18	
3 x 20	151-19
3 x 25	152-19
3 x 30	153-19
3 x 35	154-19
3 x 40	155-19
3 x 58	
4 x 6	158-19
4 x 8	159-19
4 x 10	160-19
4 x 12	161-19
4 x 14	162-19
4 x 16	163-19
4 x 20	164-19
4 x 25	165-19
4 x 30	166-19
4 x 35	167-19

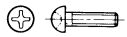
PRECISION +P
Bzn-N



7-627-□□□-□□

SIZE	Parts No.
1.7 x 1.6	552-18
x 1.8	–
x 2	552-28
x 2.2	–
x 2.5	552-08
x 2.8	–
x 3	552-38
x 3.5	552-78
x 4	552-48
x 4.5	–
x 5	552-58
x 5.5	–
x 6	–
2 x 1.8	554-38
x 2	553-18
x 2.2	–
x 2.5	553-28
x 2.8	554-58
x 3	553-38
x 3.5	554-18
x 4	553-48
x 4.5	553-58
x 5	554-28
x 5.5	–
x 6	553-68
x 7	553-88
x 8	553-98
x 10	553-78
2.6 x 2.8	556-08
x 3	–
x 3.5	556-28
x 4	556-38
x 4.5	556-48
x 5	556-58
x 5.5	–
x 6	556-78
x 7	–
x 8	–
x 9	–
x 10	–

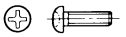
PRECISION +P
Cr-N



7-627-□□□-□□

SIZE	Parts No.
1.7 x 1.6	–
x 1.8	–
x 2	552-27
x 2.2	552-87
x 2.5	552-07
x 2.8	–
x 3	552-37
x 3.5	–
x 4	552-47
x 4.5	552-67
x 5	552-57
x 5.5	557-07
x 6	552-77
2 x 1.8	554-37
x 2	553-17
x 2.2	554-07
x 2.5	553-27
x 2.8	–
x 3	553-37
x 3.5	554-17
x 4	553-47
x 4.5	553-57
x 5	553-67
x 5.5	–
x 6	554-27
x 7	553-87
x 8	553-97
x 10	553-77
2.6 x 2.8	556-07
x 3	–
x 3.5	–
x 4	556-37
x 4.5	–
x 5	556-57
x 5.5	–
x 6	556-77
x 7	–
x 8	556-97
x 9	–
x 10	557-47

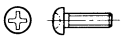
+B
Bzn-N



7-682-□□□-□□

SIZE	Parts No.
3 x 3	544-09
x 4	545-09
x 5	546-09
x 6	547-09
x 8	548-09
x 10	549-09
x 12	550-09
x 14	551-09
x 16	552-09
x 20	553-09
x 30	555-09
4 x 4	558-09
x 5	559-09
x 6	560-09
x 8	561-09
x 10	562-09
x 12	563-09
x 14	564-09
x 16	565-09
x 20	566-09
5 x 8	574-09
x 10	575-09
x 12	576-09
x 14	577-09
x 16	578-09
x 20	579-09

+B
Cr-N



7-682-□□□-□□

SIZE	Parts No.
3 x 3	544-04
x 4	545-04
x 5	546-04
x 6	547-04
x 8	548-04
x 10	549-04
x 12	550-04
x 14	551-04
x 16	552-04
x 20	553-04
4 x 4	558-04
x 5	559-04
x 6	560-04
x 8	561-04
x 10	562-04
x 12	563-04
x 14	564-04
x 16	565-04
x 20	566-04
5 x 8	574-04
x 10	575-04
x 12	576-04
x 14	577-04
x 16	578-04
x 20	579-04

+PSW
Czn-N

7-682-□□□-□□

SIZE	Parts No.
3 x 6	947-01
x 8	948-01
x 10	949-01
x 12	950-01
x 14	951-01
x 16	952-01
x 20	953-01
x 25	954-01
x 30	955-01
x 35	956-01
x 40	957-01
4 x 8	961-01
x 10	962-01
x 12	963-01
x 14	964-01
x 16	965-01
x 20	966-01
x 25	967-01
x 30	968-01
x 35	969-01
x 40	970-01

+K
Cr-N

7-682-□□□-□□

SIZE	Parts No.
3 x 4	245-04
x 5	246-04
x 6	247-04
x 8	248-04
x 10	249-04
x 12	250-04
x 14	251-04
x 16	252-04
x 20	253-04
4 x 6	260-04
x 8	261-04
x 10	262-04
x 12	263-04
x 14	264-04
x 16	265-04
x 20	266-04

+PSW
Czn-N

7-621-□□□-□□

SIZE	Parts No.
2.6 x 5	759-35
x 6	759-45
x 8	759-65
x 10	759-75
x 12	759-85
x 14	759-95
x 16	760-05
x 20	760-15
x 25	760-65

D-3. ELECTRICAL PARTS LIST

Ref.No.	Part No.	SP	Description
	PD-145 BOARD		
	A-7513-915-A	o	PRINTED CIRCUIT BOARD "PD-145"
D1	8-719-911-19	s	1SS119
D2	8-719-911-19	s	1SS119
D3	8-719-911-19	s	1SS119
D4	8-719-911-19	s	1SS119
D5	8-719-110-08	s	RD8.2ES-B2
D6	8-719-110-08	s	RD8.2ES-B2
IC1			
R1	1-249-429-11	s	CARBON 10K 5% 1/4W
R2	1-214-753-00	s	METAL 10K 1% 1/4W
R3	1-214-769-00	s	METAL 47K 1% 1/4W
R4	1-249-426-11	s	CARBON 5.6K 5% 1/4W

Ref.No.	Part No.	SP	Description
	PD-158 BOARD		
	A-7513-916-A	o	MOUNTED CIRCUIT BOARD "PD-158"
C1	1-130-477-00	s	MYLAR 0.0033MF 5% 50V
C2	1-136-800-11	s	FILM 0.1MF 5% 50V
C3	1-136-171-00	s	MYLAR 0.33MF 5% 50V
C4	1-136-800-11	s	FILM 0.1MF 5% 50V
C5	1-136-800-11	s	FILM 0.1MF 5% 50V
C6	1-136-169-00	s	MYLAR 0.22MF 5% 50V
C7	1-124-911-11	s	ELECT 220MF 20% 50V
C8	1-124-477-11	s	ELECT 47MF 20% 16V
C9	1-124-360-00	s	ELECT 1000MF 20% 16V
C10	1-124-360-00	s	ELECT 1000MF 20% 16V
C11	1-136-800-00	s	FILM 0.1MF 5% 50V
C12	1-124-360-00	s	ELECT 1000MF 20% 16V
C13	1-136-800-11	s	FILM 0.1MF 5% 50V
C14	1-102-947-00	s	CERAMIC 10PF 0.5PF 50V
C15	1-130-651-00	s	FILM 0.001MF 5% 50V
C16	1-102-980-00	s	CERAMIC 270PF 5% 50V
C17	1-130-477-00	s	MYLAR 0.0033MF 5% 50V
C18	1-136-177-00	s	MYLAR 1MF 5% 50V
C19	1-130-736-11	s	FILM 0.01MF 5% 50V
C20	1-136-177-00	s	MYLAR 1MF 5% 50V
C21	1-130-476-00	s	MYLAR 0.0027MF 5% 50V
C22	1-123-356-00	s	ELECT 10MF 20% 16V
C23	1-130-777-00	s	FILM 0.1MF 5% 100V
C24	1-126-365-51	s	ELECT 100MF 20% 100V
C25	1-136-798-11	s	FILM 0.0015MF 5% 1.5KV
C26	1-124-477-11	s	ELECT 47MF 20% 25V
C27	1-124-477-11	s	ELECT 47MF 20% 25V
C28	1-124-009-11	s	ELECT 47MF 20% 25V
C29	1-136-768-11	s	FILM 0.56MF 5% 200V
C30	1-124-477-11	s	ELECT 47MF 20% 25V
C31	1-101-884-00	s	CERAMIC 56PF 5% 50V
C32	1-136-177-00	s	MYLAR 1MF 5% 50V
C33	1-130-477-00	s	MYLAR 0.0033MF 5% 50V
C34	1-123-356-00	s	ELECT 10MF 20% 16V
C35	1-130-777-00	s	FILM 0.1MF 5% 100V
C36	1-124-930-11	s	ELECT 33MF 20% 100V
C37	1-124-795-11	s	ELECT 33MF 20% 100V
C38	1-136-177-00	s	MYLAR 1MF 5% 50V
C39	1-136-165-00	s	FILM 0.1MF 5% 50V
C40	1-102-978-00	s	CERAMIC 220PF 5% 50V
C41	1-136-801-11	s	FILM 0.22MF 5% 50V
C43	1-136-780-11	s	FILM 0.01MF 5% 100V
C44	1-136-444-11	s	FILM 0.047MF 5% 100V
C45	1-124-499-11	s	ELECT 1MF 20% 50V
C46	1-124-667-11	s	ELECT 10MF 20% 100V
C47	1-130-479-00	s	MYLAR 0.0047MF 5% 50V
C48	1-136-173-00	s	MYLAR 0.47MF 5% 50V
C49	1-130-475-00	s	MYLAR 0.0022MF 5% 50V
C50	1-136-794-11	s	FILM 0.0033MF 1KV
C51	1-136-445-11	s	FILM 0.01MF 1KV

Ref.No.	Part No.	SP	Description
C52	1-126-545-11	s	ELECT 2.2MF 450V
C53	1-126-545-11	s	ELECT 2.2MF 450V
C54	1-126-544-11	s	ELECT 4.7MF 20% 16V
C55	1-136-800-11	s	FILM 0.1MF 5% 50V
C56	1-136-800-11	s	FILM 0.1MF 5% 50V
C57	1-136-177-00	s	MYLAR 1MF 5% 50V
C58	1-130-789-00	s	FILM 1MF
CN21	1-560-338-00	o	RECEPTACLE, MALE, 7P
CN22	1-560-064-00	o	RECEPTACLE, MALE, 6P
CN23	1-560-066-00	o	RECEPTACLE, MALE, 10P
CN24	1-506-348-XX	o	RECEPTACLE, MALE, 6P
D1	1-808-597-11	s	W03B
D2	8-719-911-19	s	1SS119
D3	8-719-918-77	s	V19G
D4	1-808-596-11	s	ERC09-15
D5	8-719-918-77	s	V19G
D6	8-719-918-77	s	V19G
D7	8-719-918-77	s	V19G
D8	8-719-904-22	s	HZ12A1
D9	8-719-904-22	s	HZ12A1
D10	8-719-911-19	s	1SS119
D11	8-719-918-77	s	V19G
D12	8-719-911-19	s	1SS119
D13	8-719-918-77	s	V19G
D14	8-719-918-77	s	V19G
D15	8-719-918-77	s	V19G
D16	8-719-110-88	s	RD36ES-B4
D17	8-719-901-83	s	1SS83
D18	8-719-918-77	s	V19G
D19	8-719-918-77	s	V19G
IC1	8-759-945-36	s	TDA1670A
IC2	1-808-595-11	s	LA7852
IC3	8-759-103-87	s	UPC494C
IC4	8-759-140-85	s	UPC1093J
L1	1-409-457-11	s	COIL, SB 6mH+15%
L2	1-459-924-11	s	COIL, HORIZONTAL LINEARITY
L3	1-412-082-11	s	COIL, CHOKE 4.5mH±10%
Q1	1-808-593-11	s	2SK216
Q2	1-808-594-11	s	2SC3685
Q3	8-729-306-92	s	2SD669A
Q4	8-729-304-92	s	2SB649A
Q5	8-729-281-52	s	2SC1815-Y

Ref.No.	Part No.	SP	Description
Q6	1-806-094-21	s	2SA1009A
Q7	8-729-804-48	s	2SC3675
Q8	8-729-804-48	s	2SC3675
Q9	8-729-306-92	s	2SD669A
Q10	8-729-306-92	s	2SD669A
Q11	8-729-213-12	s	2SC2230A
Q12	8-729-281-52	s	2SC1815-Y

R1	1-249-417-11	s	CARBON	1K	5%	1/4W
R2	1-249-428-11	s	CARBON	8.2K	5%	1/4W
R3	1-249-425-11	s	CARBON	4.7K	5%	1/4W
R4	1-249-429-11	s	CARBON	10K	5%	1/4W
R5	1-249-423-11	s	CARBON	3.3K	5%	1/4W
R6	1-247-848-11	s	CARBON	5.1K	5%	1/4W
R7	1-247-889-00	s	CARBON	270K	5%	1/4W
R8	1-249-434-11	s	CARBON	27K	5%	1/4W
R9	1-247-903-00	s	CARBON	1M	5%	1/4W
R10	1-249-438-11	s	CARBON	56K	5%	1/4W
R11	1-249-385-11	s	CARBON	2.2	5%	1/4W
R12	1-249-417-11	s	CARBON	1K	5%	1/4W
R13	1-249-409-11	s	CARBON	220	5%	1/4W
R14	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R15	1-249-409-11	s	CARBON	220	5%	1/4W
R16	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R17	1-244-811-51	s	CARBON	2.7	5%	1/2W
R18	1-247-742-11	s	CARBON	180	5%	1/2W
R19	1-249-434-11	s	CARBON	27K	5%	1/4W
R20	1-249-430-11	s	CARBON	12K	5%	1/4W
R21	1-249-433-11	s	CARBON	22K	5%	1/4W
R22	1-249-426-11	s	CARBON	5.6K	5%	1/4W
R23	1-249-433-11	s	CARBON	22K	5%	1/4W
R24	1-249-429-11	s	CARBON	10K	5%	1/4W
R25	1-249-435-11	s	CARBON	33K	5%	1/4W
R26	1-249-417-11	s	CARBON	1K	5%	1/4W
R27	1-249-428-11	s	CARBON	8.2K	5%	1/4W
R28	1-249-429-11	s	CARBON	10K	5%	1/4W
R29	1-249-431-11	s	CARBON	15K	5%	1/4W
R30	1-249-431-11	s	CARBON	15K	5%	1/4W
R31	1-249-411-11	s	CARBON	330	5%	1/4W
R32	1-247-764-11	s	CARBON	10K	5%	1/2W
R33	1-215-871-11	s	METAL	2.2K	5%	1W
R34	1-216-353-00	s	METAL	2.2	5%	1W
R35	1-216-353-00	s	METAL	2.2	5%	1W
R36	1-215-892-11	s	METAL	1K	5%	2W
R37	1-249-393-11	s	CARBON	10	5%	1/4W
R38	1-249-393-11	s	CARBON	10	5%	1/4W
R39	1-249-415-11	s	CARBON	680	5%	1/4W
R40	1-249-415-11	s	CARBON	680	5%	1/4W
R41	1-249-401-11	s	CARBON	47	5%	1/4W
R42	1-247-743-11	s	CARBON	220	5%	1/2W
R43	1-249-423-11	s	CARBON	3.3K	5%	1/4W
R44	1-249-427-11	s	CARBON	6.8K	5%	1/4W
R45	1-249-417-11	s	CARBON	1K	5%	1/4W

Ref.No.	Part No.	SP	Description			
R46	1-249-423-11	s	CARBON	3.3K	5%	1/4W
R47	1-249-402-11	s	CARBON	56	5%	1/4W
R48	1-249-441-11	s	CARBON	100K	5%	1/4W
R49	1-249-433-11	s	CARBON	22K	5%	1/4W
R50	1-249-433-11	s	CARBON	22K	5%	1/4W
R51	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R52	1-249-434-11	s	CARBON	27K	5%	1/4W
R53	1-249-432-11	s	CARBON	18K	5%	1/4W
R54	1-249-425-11	s	CARBON	4.7K	5%	1/4W
R55	1-249-425-11	s	CARBON	4.7K	5%	1/4W
R56	1-249-417-11	s	CARBON	1K	5%	1/4W
R57	1-249-417-11	s	CARBON	1K	5%	1/4W
R58	1-215-876-00	s	METAL	15K	5%	1W
R59	1-249-440-11	s	CARBON	82K	5%	1/4W
R60	1-249-422-11	s	CARBON	2.7K	5%	1/4W
R61	1-249-413-11	s	CARBON	470	5%	1/4W
R62	1-249-422-11	s	CARBON	2.7K	5%	1/4W
R63	1-249-433-11	s	CARBON	22K	5%	1/4W
R64	1-249-429-11	s	CARBON	10K	5%	1/4W
R65	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R66	1-249-417-11	s	CARBON	1K	5%	1/4W
R67	1-247-760-11	s	CARBON	4.7K	5%	1/2W
R68	1-249-424-11	s	CARBON	3.9K	5%	1/4W
R69	1-249-413-11	s	CARBON	470	5%	1/4W
R70	1-249-435-11	s	CARBON	33K	5%	1/4W
R71	1-247-887-00	s	CARBON	220K	5%	1/4W
R72	1-249-429-11	s	CARBON	10K	5%	1/4W
R73	1-249-441-11	s	CARBON	100K	5%	1/4W
R74	1-249-435-11	s	CARBON	33K	5%	1/4W
R75	1-249-431-11	s	CARBON	15K	5%	1/4W
R76	1-249-437-11	s	CARBON	47K	5%	1/4W
R77	1-249-428-11	s	CARBON	8.2K	5%	1/4W
R78	1-249-429-11	s	CARBON	10K	5%	1/4W
R79	1-249-422-11	s	CARBON	2.7K	5%	1/4W
R80	1-249-413-11	s	CARBON	470	5%	1/4W
R81	1-249-425-11	s	CARBON	4.7K	5%	1/4W
R82	1-259-880-11	s	CARBON	2.2K	5%	1/4W
R83	1-249-437-11	s	CARBON	47K	5%	1/4W
R84	1-214-923-00	s	CARBON	270K	5%	1/2W
R85	1-249-417-11	s	CARBON	1K	5%	1/4W
R86	1-249-425-11	s	CARBON	4.7K	5%	1/4W
R87	1-249-496-11	s	CARBON	100K	5%	1/2W
R88	1-259-880-11	s	CARBON	2.2M	5%	1/4W
R89	1-259-880-11	s	CARBON	2.2M	5%	1/4W
R90	1-249-492-11	s	CARBON	47K	5%	1/2W
R91	1-214-937-00	s	CARBON	1M	5%	1/2W
R92	1-259-880-11	s	CARBON	2.2M	5%	1/4W
R93	1-247-752-11	s	CARBON	1K	5%	1/2W
R94	1-247-752-11	s	CARBON	1K	5%	1/2W
R95	1-214-937-00	s	CARBON	1M	5%	1/2W
R96	1-247-736-11	s	CARBON	56	5%	1/2W
R97	1-247-744-11	s	CARBON	270	5%	1/2W
R98	1-247-746-11	s	CARBON	390	5%	1/2W
R101	1-249-425-11	s	CARBON	4.7K	5%	1/4W
R102	1-249-439-11	s	CARBON	68K	5%	1/4W
R103	1-249-417-11	s	CARBON	1K	5%	1/4W
R104	1-249-417-11	s	CARBON	1K	5%	1/4W
R105	1-249-409-11	s	CARBON	220	5%	1/4W

Ref.No.	Part No.	SP	Description
RV1	1-238-382-11	s	RES, ADJ, CERMET 5K
RV2	1-238-382-11	s	RES, ADJ, CERMET 5K
RV3	1-238-382-11	s	RES, ADJ, CERMET 5K
RV4	1-238-382-11	s	RES, ADJ, CERMET 5K
RV5	1-238-380-11	s	RES, ADJ, CERMET 200
RV6	1-238-382-11	s	RES, ADJ, CERMET 5K
RV7	1-238-382-11	s	RES, ADJ, CERMET 5K
RV8	1-238-380-11	s	RES, ADJ, CERMET 200
RV9	1-238-382-11	s	RES, ADJ, CERMET 5K
RV10	1-238-379-11	s	RES, ADJ, CERMET 1M
SG1	1-519-501-11	s	GAP, SPARK
SG2	1-519-501-11	s	GAP, SPARK
SG3	1-519-381-11	s	GAP, GAS DISCHARGE TUBE
T1	1-437-182-11	s	DRIVE (DT-299)
T2	1-439-446-11	s	HORIZONTAL OUTPUT (DT-399)

Ref.No.	Part No.	SP	Description			
PD-159 BOARD						
	A-7513-912-A	o	MOUNTED CIRCUIT BOARD "PD-159"			
C1	1-126-101-11	s	ELECT	100MF	20%	16V
C2	1-126-101-11	s	ELECT	100MF	20%	16V
C3	1-136-800-11	s	FILM	0.1MF	5%	50V
C4	1-136-800-11	s	FILM	0.1MF	5%	50V
C5	1-126-101-11	s	ELECT	100MF	20%	16V
C6	1-126-101-11	s	ELECT	100MF	20%	16V
C7	1-136-800-11	s	FILM	0.1MF	5%	50V
C8	1-130-471-00	s	MYLAR	0.001MF	5%	50V
C9	1-124-477-11	s	ELECT	47MF	20%	16V
C10	1-136-800-11	s	FILM	0.1MF	5%	50V
C11	1-136-800-11	s	FILM	0.1MF	5%	50V
C12	1-124-477-11	s	ELECT	47MF	20%	16V
C13	1-130-471-00	s	MYLAR	0.001MF	5%	50V
C14	1-136-800-11	s	FILM	0.1MF	5%	50V
C15	1-126-101-11	s	ELECT	100MF	20%	16V
C16	1-136-800-11	s	FILM	0.1MF	5%	50V
C17	1-101-886-00	s	CERAMIC	62PF	5%	50V
C18	1-130-471-00	s	MYLAR	0.001MF	5%	50V
C19	1-102-951-00	s	CERAMIC	15PF	5%	50V
C20	1-126-101-11	s	ELECT	100MF	20%	16V
C21	1-136-800-11	s	FILM	0.1MF	5%	50V
C22	1-136-165-00	s	FILM	0.1MF	5%	50V
C23	1-126-101-11	s	ELECT	100MF	20%	16V
C24	1-126-101-11	s	ELECT	100MF	20%	16V
C25	1-136-800-11	s	FILM	0.1MF	5%	50V
C26	1-124-477-11	s	ELECT	47MF	20%	16V
C27	1-124-477-11	s	ELECT	47MF	20%	16V
C28	1-136-173-00	s	MYLAR	0.47MF	5%	50V
C29	1-136-800-11	s	FILM	0.1MF	5%	50V
C30	1-102-824-00	s	CERAMIC	470PF	5%	50V
C31	1-102-824-00	s	CERAMIC	470PF	5%	50V
C32	1-102-978-00	s	CERAMIC	220PF	5%	50V
C33	1-136-169-00	s	MYLAR	0.22MF	5%	50V
C34	1-124-477-11	s	ELECT	47MF	20%	16V
C35	1-136-800-11	s	FILM	0.1MF	5%	50V
C36	1-130-487-00	s	MYLAR	0.022MF	5%	50V
C37	1-102-971-00	s	CERAMIC	82PF	5%	50V
CN11	1-560-338-00	o	RECEPTACLE, MALE, 7P			
CN12	1-560-064-00	o	RECEPTACLE, MALE, 6P			
D1	8-719-911-19	s	1SS119			
D2	8-719-993-91	s	HZ9C1			
D3	8-719-911-19	s	1SS119			

Ref.No.	Part No.	SP	Description			
DL1	1-415-456-11	s	30ns+2ns (ZDL-853)			
DL2	1-415-456-11	s	30ns+2ns (ZDL-853)			
IC1	1-808-588-11	s	SN76515P			
IC2	8-759-201-47	s	TA7357AP			
IC3	8-759-140-85	s	UPC1093J			
IC4	8-759-140-85	s	UPC1093J			
IC5	8-759-140-85	s	UPC1093J			
Q1	1-808-587-11	s	2SC3136			
Q2	1-808-587-11	s	2SC3136			
Q3	8-729-110-53	s	2SA1005			
Q4	8-729-104-80	s	2SC3355			
Q5	8-729-110-53	s	2SA1005			
Q6	8-729-302-77	s	2SC1906			
Q7	8-729-110-53	s	2SA1005			
Q8	8-729-302-77	s	2SC1906			
Q9	8-729-110-53	s	2SA1005			
Q10	8-729-201-52	s	2SA1015			
Q11	8-729-281-52	s	2SC1815-Y			
Q12	8-729-302-77	s	2SC1906			
Q13	8-729-110-53	s	2SA1005			
Q14	8-729-302-77	s	2SC1906			
Q15	8-729-302-77	s	2SC1906			
Q16	8-729-110-53	s	2SA1005			
Q17	8-729-302-77	s	2SC1906			
Q18	8-729-117-54	s	2SA1015			
Q19	1-808-586-11	s	2SK657			
Q20	8-729-281-52	s	2SC1815-Y			
Q21	8-729-281-52	s	2SC1815-Y			
Q22	8-729-117-54	s	2SA1015-Y			
Q23	8-729-281-52	s	2SC1815-Y			
R1	1-214-837-11	s	METAL	75	1%	1/2W
R2	1-249-425-11	s	CARBON	4.7K	5%	1/4W
R3	1-249-433-11	s	CARBON	22K	5%	1/4W
R4	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R5	1-249-401-11	s	CARBON	47	5%	1/4W
R6	1-249-413-11	s	CARBON	470	5%	1/4W
R7	1-214-104-00	s	METAL	68	1%	1/4W
R8	1-249-402-11	s	CARBON	56	5%	1/4W
R9	1-214-705-00	s	METAL	100	1%	1/4W
R10	1-214-705-00	s	METAL	100	1%	1/4W
R11	1-214-733-00	s	METAL	1.5K	1%	1/4W
R12	1-214-741-00	s	METAL	3.3K	1%	1/4W
R13	1-214-749-00	s	METAL	6.8K	1%	1/4W
R14	1-214-741-00	s	METAL	3.3K	1%	1/4W
R15	1-214-719-00	s	METAL	390	1%	1/4W

Ref.No.	Part No.	SP	Description			
R16	1-249-401-11	s	CARBON	47	5%	1/4W
R17	1-214-092-00	s	METAL	22	1%	1/4W
R18	1-249-402-11	s	CARBON	56	5%	1/4W
R19	1-214-705-00	s	METAL	100	1%	1/4W
R20	1-214-705-00	s	METAL	100	1%	1/4W
R21	1-249-402-11	s	CARBON	56	5%	1/4W
R22	1-214-757-00	s	METAL	15K	1%	1/4W
R23	1-214-745-00	s	METAL	4.7K	1%	1/4W
R24	1-249-401-11	s	CARBON	47	5%	1/4W
R25	1-214-721-00	s	METAL	470	1%	1/4W
R26	1-214-721-00	s	METAL	470	1%	1/4W
R27	1-249-401-11	s	CARBON	47	5%	1/4W
R28	1-249-420-11	s	CARBON	1.8K	5%	1/4W
R29	1-249-409-11	s	CARBON	220	5%	1/4W
R30	1-249-405-11	s	CARBON	100	5%	1/4W
R31	1-249-424-11	s	CARBON	3.9K	5%	1/4W
R32	1-249-409-11	s	CARBON	220	5%	1/4W
R33	1-249-409-11	s	CARBON	220	5%	1/4W
R34	1-249-433-11	s	CARBON	22K	5%	1/4W
R35	1-249-412-11	s	CARBON	390	5%	1/4W
R36	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R37	1-249-426-11	s	CARBON	5.6K	5%	1/4W
R38	1-249-441-11	s	CARBON	100K	5%	1/4W
R39	1-249-429-11	s	CARBON	10K	5%	1/4W
R40	1-249-426-11	s	CARBON	5.6K	5%	1/4W
R41	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R42	1-249-426-11	s	CARBON	5.6K	5%	1/4W
R43	1-249-407-11	s	CARBON	150	5%	1/4W
R44	1-249-417-11	s	CARBON	1K	5%	1/4W
R46	1-249-433-11	s	CARBON	22K	5%	1/4W
R47	1-249-433-11	s	CARBON	22K	5%	1/4W
R48	1-249-401-11	s	CARBON	47	5%	1/4W
R49	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R50	1-249-405-11	s	CARBON	100	5%	1/4W
R51	1-249-419-11	s	CARBON	1.5K	5%	1/4W
R52	1-214-717-00	s	METAL	330	1%	1/4W
R53	1-214-713-00	s	METAL	220	1%	1/4W
R54	1-249-401-11	s	CARBON	47	5%	1/4W
R55	1-249-414-11	s	CARBON	560	5%	1/4W
R56	1-249-408-11	s	CARBON	180	5%	1/4W
R57	1-247-883-00	s	CARBON	150K	5%	1/4W
R58	1-249-405-11	s	CARBON	100	5%	1/4W
R59	1-249-430-11	s	CARBON	12K	5%	1/4W
R60	1-247-895-00	s	CARBON	470K	5%	1/4W
R61	1-249-436-11	s	CARBON	39K	5%	1/4W
R62	1-249-417-11	s	CARBON	1K	5%	1/4W
R63	1-249-426-11	s	CARBON	5.6K	5%	1/4W
R64	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R65	1-249-426-11	s	CARBON	5.6K	5%	1/4W
R66	1-249-423-11	s	CARBON	3.3K	5%	1/4W
R67	1-249-426-11	s	CARBON	5.6K	5%	1/4W
R68	1-249-425-11	s	CARBON	4.7K	5%	1/4W
R69	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R70	1-249-426-11	s	CARBON	5.6K	5%	1/4W
R71	1-249-429-11	s	CARBON	10K	5%	1/4W

Ref.No.	Part No.	SP	Description			
R72	1-249-417-11	s	CARBON	1K	5%	1/4W
R73	1-249-429-11	s	CARBON	10K	5%	1/4W
R74	1-249-441-11	s	CARBON	100K	5%	1/4W
R75	1-249-412-11	s	CARBON	390	5%	1/4W
R76	1-249-426-11	s	CARBON	5.6K	5%	1/4W
R77	1-249-426-11	s	CARBON	5.6K	5%	1/4W
R78	1-249-405-11	s	CARBON	100	5%	1/4W
RV1	1-238-387-11	s	RES, ADJ, CERMET			200
RV2	1-238-388-11	s	RES, ADJ, CERMET			500
RV3	1-238-387-11	s	RES, ADJ, CERMET			200
RV4						

Ref.No.	Part No.	SP	Description			
PD-160 BOARD						
	A-7513-911-A	o	MOUNTED CIRCUIT BOARD "PD-160"			
C1	1-124-631-11	s	ELECT	47MF	20%	16V
C2	1-124-477-11	s	ELECT	47MF	20%	16V
C3	1-136-800-11	s	FILM	0.1MF	5%	50V
C4	1-136-177-00	s	MYLAR	1MF	5%	50V
C5	1-124-631-11	s	ELECT	47MF	20%	16V
C6	1-126-101-11	s	ELECT	100MF	20%	16V
C7	1-136-165-00	s	FILM	0.1MF	5%	50V
C8	1-124-477-11	s	ELECT	47MF	20%	16V
C9	1-136-165-00	s	FILM	0.1MF	5%	50V
C10	1-126-101-11	s	ELECT	100MF	20%	16V
C12	1-101-884-00	s	CERAMIC	56PF	5%	50V
C13	1-136-165-00	s	FILM	0.1MF	5%	50V
C14	1-130-777-00	s	FILM	0.1MF	5%	100V
C15	1-126-243-11	s	ELECT	120MF	20%	100V
C16	1-124-360-00	s	ELECT	1000MF	20%	16V
CN13	1-560-063-00	o	RECEPTACLE, MALE, 5P			
CN14	1-560-065-00	o	RECEPTACLE, MALE, 8P			
D1	8-719-901-83	s	1SS83			
D2	8-719-911-19	s	1SS119			
D3	8-719-109-93	s	RD6.2ES-B2			
D4	8-719-921-01	s	EBR5534S			
D5	8-719-901-83	s	1SS83			
D6	8-719-901-83	s	1SS83			
D7	8-719-981-77	s	V19G			
D8	8-719-981-77	s	V19G			
IC1	1-808-591-11	s	M51392P			
IC2	8-759-140-85	s	UPC1093J			
IC3	1-808-590-11	s	UPC317H			
IC4	1-808-589-11	s	VPA-05			
L1	1-412-085-11	s	INDUCTOR 2.7UH			
Q1	8-729-802-37	s	2SC3595-C			
Q2	8-729-802-37	s	2SC3595-C			
R1	1-249-405-11	s	CARBON	100	5%	1/4W
R2	1-249-416-11	s	CARBON	820	5%	1/4W
R3	1-249-431-11	s	CARBON	15K	5%	1/4W
R4	1-249-428-11	s	CARBON	8.2K	5%	1/4W
R5	1-249-429-11	s	CARBON	10K	5%	1/4W
R6	1-249-442-11	s	CARBON	510	5%	1/4W
R7	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R8	1-249-419-11	s	CARBON	1.5K	5%	1/4W
R9	1-249-414-11	s	CARBON	560	5%	1/4W
R10	1-249-409-11	s	CARBON	220	5%	1/4W
R11	1-249-421-11	s	CARBON	2.2K	5%	1/4W
R12	1-249-413-11	s	CARBON	470	5%	1/4W
R13	1-249-409-11	s	CARBON	220	5%	1/4W
R14	1-249-409-11	s	CARBON	220	5%	1/4W
R15	1-249-405-11	s	CARBON	100	5%	1/4W
R16	1-249-405-11	s	CARBON	100	5%	1/4W
R17	1-249-438-11	s	CARBON	56K	5%	1/4W
R18	1-247-848-11	s	CARBON	5.1K	5%	1/4W
R19	1-249-405-11	s	CARBON	100	5%	1/4W
R20	1-215-858-00	s	METAL	15	5%	1W F
R21	1-249-420-11	s	CARBON	1.8K	5%	1/4W
R22	1-249-420-11	s	CARBON	1.8K	5%	1/4W
RV1	1-238-389-11	s	RES, ADJ, CERMET 5K			
SG1	1-519-381-11	s	GAP, GAS DISCHARGE TUBE			

Ref.No.	Part No.	SP	Description
	PD-161 BOARD		
	A-7513-914-A	o	MOUNTED CIRCUIT BOARD "PD-161"
	1-238-386-11	s	RES, ADJ, CERMET 1K
C1	1-130-071-00	s	FILM 0.1MF 2% 100V
C2	1-130-072-00	s	FILM 0.022MF 2% 100V
C3	1-136-430-11	s	FILM 0.001MF 5% 1.25KV
C4	1-124-795-11	s	ELECT 33MF 20% 100V
C5	1-136-428-11	s	FILM 0.047MF 0 1KV
C6	1-136-187-11	s	FILM 0.047MF 0 250V
C7	1-123-356-00	s	ELECT 10MF 20% 16V
C8	1-124-478-11	s	ELECT 100MF 20% 25V
C9	1-126-101-11	s	ELECT 100MF 20% 16V
C10	1-130-071-00	s	FILM 0.1MF 2% 100V
C11	1-136-773-00	s	FILM 0.022MF 2% 100V
C12	1-124-929-11	s	ELECT 22MF 20% 100V
C13	1-130-071-00	s	FILM 0.1MF 2% 100V
CN31	1-560-066-00	o	RECEPTACLE, MALE, 10P
CN32	1-560-060-00	o	RECEPTACLE, MALE, 2P
CN53	1-561-207-00	o	PLUG HOUSING, FEMALE, 3P
D1	8-719-918-77	s	V19G
D2	8-719-940-49	s	U07N
D3	8-719-300-80	s	RU1C
D4	8-719-918-77	s	V19G
D5	8-719-109-96	s	RD6.8ES-B1
D6	8-719-911-19	s	1SS119
D7	8-719-911-19	s	1SS119
D8	8-719-911-19	s	1SS119
D9	8-719-911-19	s	1SS119
D10	8-719-911-19	s	1SS119
D11	8-719-918-77	s	V19G
IC1	8-759-702-02	s	NJM062M
PL1			
PL2			
Q1	1-808-593-11	s	2SK216
Q2	1-808-594-11	s	2SC3685
Q3	8-729-213-12	s	2SC2230A
Q4	1-806-094-21	s	2SA1009A

Ref.No.	Part No.	SP	Description
R1	1-249-411-11	s	CARBON 330 5% 1/4W
R2	1-249-441-11	s	CARBON 100K 5% 1/4W
R3	1-247-752-11	s	CARBON 1K 5% 1/2W
R4	1-216-435-11	s	METAL OXIDE 2.7K 5% 1W
R5	1-216-360-11	s	METAL OXIDE 8.2 5% 1W
R6	1-249-441-11	s	CARBON 100K 5% 1/4W
R7	1-247-739-11	s	CARBON 100 5% 1/2W
R8	1-247-739-11	s	CARBON 100 5% 1/2W
R9	1-216-359-00	s	METAL OXIDE 6.8 5% 1W
R10	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R11	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R12	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R13	1-249-417-11	s	CARBON 1K 5% 1/4W
R14	1-247-885-00	s	CARBON 180K 5% 1/4W
R15	1-249-429-11	s	CARBON 10K 5% 1/4W
R16	1-249-411-11	s	CARBON 330 5% 1/4W
R17	1-249-405-11	s	CARBON 100 5% 1/4W
R18	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R19	1-247-758-11	s	CARBON 3.3K 5% 1/2W
R20	1-249-421-11	s	CARBON 2.2K 5% 1/4W
T1	1-437-182-11	s	DRIVE (DT-299)
T2	1-439-447-11	s	FLYBACK (DH-1409)

PD-162 BOARD

Ref.No.	Part No.	SP	Description
	A-7513-913-A	o	MOUNTED CIRCUIT BOARD "PD-162"
C3			
C4	1-126-547-11	s	ELECT 82MF 250V
C5	1-136-191-11	s	FILM 0.22MF 250V
C6	1-136-792-11	s	FILM 0.001MF 10% 1KV
C7	1-124-583-11	s	ELECT 22MF 20% 22V
C8	1-123-356-00	s	ELECT 10MF 20% 16V
C9	1-124-499-11	s	ELECT 1MF 20% 50V
C10	1-130-487-00	s	MYLAR 0.022MF 5% 50V
C11	1-126-109-11	s	ELECT 10MF 20% 25V
C12	1-130-487-00	s	MYLAR 0.022MF 5% 50V
C13	1-136-800-11	s	FILM 0.1MF 5% 50V
C14	1-101-880-00	s	CERAMIC 47PF 5% 50V
C15	1-126-141-11	s	ELECT 820MF 25V
C16	1-124-514-11	s	ELECT 100MF 20% 50V
C17	1-124-599-00	s	ELECT 220MF 20% 25V
C18	1-136-800-11	s	FILM 0.1MF 5% 50V
C19	1-126-243-11	s	ELECT 120MF 20% 100V
C20	1-136-173-00	s	MYLAR 0.47MF 5% 50V
C21	1-136-800-11	s	FILM 0.1MF 5% 50V
C22	1-124-795-11	s	ELECT 33MF 20% 100V
C23	1-136-177-00	s	MYLAR 1MF 5% 50V
C24	1-136-800-11	s	FILM 0.1MF 5% 50V
CN41	1-568-009-11	o	RECEPTACLE, MALE, 3P
CN42	1-560-063-00	o	RECEPTACLE, MALE, 5P
CN43	1-560-338-00	o	RECEPTACLE, MALE, 7P
CN44	1-560-061-00	o	RECEPTACLE, MALE, 3P
D1	8-719-109-85	s	RD5.1ES-B2
D2	8-719-305-15	s	1S1885
D3	8-719-908-06	s	ERA81-005
D4	8-719-918-77	s	V19G
D5	8-719-911-19	s	1SS119
D6	8-719-302-43	s	EL1Z
D7	1-808-592-11	s	RU4AM
IC1	8-759-140-84	s	UPC1094C
IC2	8-759-171-18	s	UPC7818H
IC3	1-808-598-11	s	PHOTO COUPLER PC904
L1	1-412-084-11	s	COIL, CHOKE 3.3MH
L2	1-412-083-11	s	COIL, CHOKE 100UH
L3	1-412-083-11	s	COIL, CHOKE 100UH
L4	1-412-083-11	s	COIL, CHOKE 100UH
L5	1-512-083-11	s	COIL, CHOKE 100UH
L6	1-543-578-11	s	BEAD, FERRITE
L7	1-543-578-11	s	BEAD, FERRITE
L8	1-543-578-11	s	BEAD, FERRITE
L9	1-412-083-11	s	COIL, CHOKE 100UH
L10	1-412-083-11	s	COIL, CHOKE 100UH
Q1	8-729-213-12	s	2SC2230A
Q2			2SK897
Q3	8-729-281-52	s	2SC1815-Y
R1	1-249-496-11	s	CARBON 100K 5% 1/2W
R2	1-247-764-11	s	CARBON 10K 5% 1/2W
R3	1-249-393-11	s	CARBON 10 5% 1/4W
R4	1-249-417-11	s	CARBON 1K 5% 1/4W
R5	1-216-350-11	s	METAL 1.2 5% 1W
R6	1-249-398-11	s	CARBON 27 5% 1/4W
R7	1-215-912-11	s	METAL 150 5% 3W
R8	1-249-434-11	s	CARBON 27K 5% 1/4W
R9	1-249-432-11	s	CARBON 18K 5% 1/4W
R10	1-249-417-11	s	CARBON 1K 5% 1/4W
R11	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R12	1-249-429-11	s	CARBON 10K 5% 1/4W
R13	1-214-781-00	s	METAL 150K 1% 1/4W
R14	1-249-397-11	s	CARBON 22 5% 1/4W
R15	1-249-417-11	s	CARBON 1K 5% 1/4W
R16	1-249-417-11	s	CARBON 1K 5% 1/4W
R17	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R18	1-249-417-11	s	CARBON 1K 5% 1/4W
R19	1-216-438-11	s	METAL 8.2K 5% 1W
R20	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R21	1-249-439-11	s	CARBON 68K 5% 1/4W
R22	1-249-429-11	s	CARBON 10K 5% 1/4W
R23	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R24	1-249-397-11	s	CARBON 22 5% 1/4W
RV1	1-238-389-11	s	RES, ADJ, CERMET 5K
T1	1-449-472-11	s	DC-DC CONVERTER (ST-020)

Ref.No.	Part No.	SP	Description
PD-163 BOARD			
	A-7513-915-A	o	MOUNTED CIRCUIT BOARD "PD-163"
CN51	1-560-061-00	o	RECEPTACLE, MALE, 3P
CN52	1-560-062-00	o	RECEPTACLE, MALE, 4P
CN53	1-560-061-00	o	RECEPTACLE, MALE, 3P
CN54	1-560-063-00	o	RECEPTACLE, MALE, 5P
D1	8-719-993-92	s	HZ9C2
D2	8-719-911-19	s	1SS119
D3	8-719-993-92	s	HZ9C2
D4	8-719-993-92	s	HZ9C2
D5	8-719-911-19	s	1SS119
Q1	8-729-281-52	s	2SC1815-Y
Q2	8-729-281-52	s	2SC1815-Y
Q3	8-729-281-52	s	2SC1815-Y
Q4	8-729-304-92	s	2SB649A
Q5	8-729-306-92	s	2SD669A
Q6	8-729-304-92	s	2SB649A
R1	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R2	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R3	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R4	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R5	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R6	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R7	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R8	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R9	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R10	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R11	1-249-428-11	s	CARBON 8.2K 5% 1/4W
R12	1-249-420-11	s	CARBON 1.8K 5% 1/4W
R13	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R14	1-216-425-11	s	METAL 56 5% 1W
R15	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R16	1-216-425-11	s	METAL 56 5% 1W
R17	1-249-393-11	s	CARBON 10 5% 1/4W

Ref.No.	Part No.	SP	Description
PD-164 BOARD			
	1-628-808-11	o	PRINTED CIRCUIT BOARD "PD-164"
CN54	1-561-209-00	o	PLUG HOUSING, FEMALE, 5P
D1	8-719-921-01	s	EBR5534S
D2	8-719-900-58	s	GL-5PG95
D3	8-719-921-01	s	EBR5534S

Ref.No.	Part No.	SP	Description
	FRAME		
	1-451-334-11	s	DEFLECTION YOKE
	1-526-837-11	o	SOCKET, CRT
CN1	1-562-989-11	s	RECEPTACLE, MALE, 25P
	1-935-964-15	o	HARNESS(TILT)
	1-562-041-00	o	PLUG, FEMALE, 25P
	1-562-766-11	o	PLUG CONTACT
	1-562-580-11	o	PLUG CONTACT
	1-560-904-11	o	PLUG, MALE, 25P
	1-564-774-11	o	PLUG CONTACT
	1-564-775-11	o	PLUG CONTACT
RV1	1-224-981-00	s	RES, VAR, CERMET 5K "BRIGHTNESS"
RV2	1-224-981-00	s	RES, VAR, CERMET 5K "PEAKING"
RV3	1-224-981-00	s	RES, VAR, CERMET 5K "CONTRAST"
S1	1-554-366-00	s	SWITCH, TOGGLE "PEAKING ON/OFF"
V1	1-546-076-11	s	CRT (E8163B45)

D-4. SUPPLIED ACCESSORIES

Ref.No.	Part No.	SP	Description
	X-3697-016-1	s	HOOD ASSY
	X-4027-901-1	s	HOOD ASSY, INDOOR
		s	LAMP
		o	CARRYING CASE
	4-027-937-01	s	PLATE, NUMBER

HDVF-75(E)
3-697-363-01

Sony Corporation

© 1988

Printed in Japan
1988.11 09